STAFF WORKSHOP

BEFORE THE

CALIFORNIA ENERGY RESOURCES CONSERVATION

AND DEVELOPMENT COMMISSION

In the Matter of:)
) Docket No.
FUEL EFFICIENT TIRE PROGRAM   ) 07-FET-1
(AB-844, Statutes of 2003)   )
_____)

CALIFORNIA ENERGY COMMISSION

1516 NINTH STREET

HEARING ROOM B

SACRAMENTO, CALIFORNIA

WEDNESDAY, APRIL 8, 2009

10:02 A.M.

STAFF AND CONSULTANTS PRESENT

Ray Tuvell

Adam Gottlieb

Caryn Holmes

Mike Smith

ALSO PRESENT

Tracey J. Norberg, Corporate Counsel
Rubber Manufacturers Association

Daniel M. Guiney
Yokohama Tire Corporation

Mark E. Hawley
ENVIRON Corporation

Eugene A. Petersen
Consumer Reports

Tim Robinson
Bridgestone Firestone North American Tire, LLC

Michael Wischhusen
Michelin North America, Inc.

Alan Meier
Lawrence Berkeley National Laboratory

Luke Tonachel (via teleconference)
National Resource Defense

Walter H. Waddell
Exxon Mobil Chemical Company

Nobuhiko Watanabe
Toyo Tires Holdings of America, Inc.

Thomas Okihisa
Toyo Tire (U.S.A.) Corporation

B.B. Blevins
California Strategies, LLC

ALSO PRESENT

Andrew F. Burke
Institute of Transportation Studies
University of California Davis

Alberto C. Sumera, Jr.
Yokohama Tire Corporation

Bradley J. Rump
Cooper Tire and Rubber Company

Sim Ford
The Goodyear Tire and Rubber Company

Megan Lloyd-Jones
Edelman Public Relations

Julie Abraham
Hisham Mohamed (via teleconference)
Steven Wood
National Highway Traffic Safety Administration
U.S. Department of Transportation

Brian Callahan (via teleconference)
Hankook Tire

Bob Ulrich (via teleconference)
Modern Tire Dealer Magazine

Sally French (via teleconference)
Integrated Waste Management Board

Randy Cooper (via teleconference)
Kumbo Tire

Jim Popio (via teleconference)
Smithers-Rabena Laboratory

Jennifer Tuthill (via teleconference)
Natural Resources Canada

Bruce Lambillotte (via teleconference)
Smithers Scientific Services

Ayana Miranda
Maryland Department of the Environment

ALSO PRESENT

Mike Miguel
Jessica Johnston
Kamal Ahuja
Mihail Cucu
California Air Resources Board

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 1              P R O C E E D I N G S

 2                                    10:02 a.m.

 3          MR. TUVELL:  I'd like to bring the

 4     workshop to order.  We have a little bit cosier

 5     room for the workshop today, as opposed to our

 6     main hearing room.  Tracey and I were just

 7     talking.  Hope that increases the opportunity for

 8     dialogue, in particular.  But we're likely to pay

 9     a price ventilation-wise, so I want to apologize

10     for that ahead of time.

11          Thank you for coming.  My name is Ray

12     Tuvell.  I'm the manager of the fuel efficient

13     tire program here at the California Energy

14     Commission.  And this is one of our staff

15     workshops that we're using to try to solicit

16     information, exchange views, perspectives, enter

17     into a dialogue to get the issues out, the

18     information out, the perspectives out that we can

19     then use to move forward with developing a

20     consumer information program principally for fuel

21     efficient tires.  And this is one in a series of

22     our workshops that we have conducted.

23          I have a little bit of basic business to

24     take care of first.  First of all, the restrooms

25     are right outside the door and to the right.
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1   First flight up there's a coffee shop if you want

2   to go grab a cup of coffee, take a break of some

3   sort.

4   We do not have scheduled breaks on the

5   agenda, as you see, but it's obviously our

6   intention to break at some time for lunch and then

7   we'll kind of do that by figuring out how things

8   go and finding the appropriate timing. But figure

9   around 12-ish or so we'll be taking a break.

10   In the case of an emergency in the

11   building today and the siren goes off and we need

12   to evacuate, simply follow me. We'll go out the

13   door and our evacuation procedure is across,

14   katty-corner to the park over there. And wait for

15   instructions to occur in coming back. Not

16   anticipating any earthquakes or anything today,

17   guys. Those of you that are outside of

18   California.

19   We do have a very ambitious agenda

20   today, as I hope you've seen when you picked up

21   the material or received our notices. And so I'm

22   looking forward to moving forward with it. And

23   fully expect it, though, to take the entire day.

24   And so please plan accordingly.

25   Also, let me mention that this workshop

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 1      is a little unique, especially for me, in that
 2      ordinarily I'm responsible for pulling the
 3      workshop together and the agenda and getting all
 4      the speakers and everything going.
 5              But today what we had done is we
 6      provided that opportunity for the RMA and the tire
 7      industry.  So the agenda that you see today, and,
 8      of course, I'm going to soon be handing over the
 9      mic to Tracy, is the tire industry's desire to get
10      this information out there.  Okay.
11              So soon after my introduction I'm going
12      to hand over the mic and the orchestration of this
13      workshop to Tracey Norberg of the RMA.
14              Now, this being the case, and Tracey and
15      I talked about this, we really want to encourage
16      dialogue.  And while it may seem a little bit
17      formal in the room today, yes, I do have a court
18      reporter, and yes, we have processes and
19      procedures, I really want to encourage dialogue.
20      Okay.
21              And that being the case, and Tracey and
22      I have talked about this also, please bring up
23      questions during the presentations.  Don't hold it
24      all to the end, okay.  That will be the most
25      useful to us.
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1   Now, in doing that, since we are

2   recording today, a couple things that are

3   important. Please make sure to state your name

4   and affiliation for the record. If you're coming

5   up to ask questions I ask you to come to the mic

6   over here at this end of the table where the two

7   gentlemen are sitting. Okay. And that will get

8   you on the record and over the speakerphone.

9   We are webcasting today. And so there

10   will be other people participating through the

11   webcast, and, of course, I'm encouraging them,

12   just as I'm encouraging you in the room, to engage

13   in full participation. Okay.

14   So, what else do I have -- yeah, and of

15   course, we are transcribing the entire meeting.

16   So following the workshop we will post on our

17   website copies of all of the presentations, plus a

18   transcript of the meeting today. Okay.

19   And so that's about it for me. If

20   there's any other questions as the day goes by,

21   you know, just grab me, let me know. Otherwise

22   I'm going to come out in the audience and be an

23   audience-type participator today. Little bit of a

24   different role for me.

25   So, Tracey, going to hand it off to you

5

1   now. And this is Tracey Norberg from the Rubber

2   Manufacturers Association.

3   That's okay. If it's okay with you

4   folks -- Tracey has asked if it would be okay,

5   people would feel comfortable introducing

6   themselves for the record, as being in the meeting

7   today.

8   So, it's going to take a little bit of a

9   parade, but if I can ask you to come up to the mic

10   and just introduce yourself, and affiliation, for

11   the record.

12   And also following completing that in

13   the room, if I could ask for the people on WebEx

14   to also introduce themselves and their

15   affiliation, I would really appreciate that.

16   MR. WISCHHUSEN: My name's Mike

17   Wischhusen representing Michelin.

18   MR. GUINEY: Dan Guiney, Yokohama Tire.

19   MR. PETERSEN: I'm Gene Petersen with

20   Consumer Reports.

21   MR. WATANABE: I'm Nobuhiko Watanabe,

22   Toyo Tires.

23   MR. OKIHISA: Thomas Okihisa with Toyo

24   Tires.

25   MR. BLEVINS: B.B. Blevins with

1   California Strategies.

2   MR. MEIER: Alan Meier, Lawrence

3   Berkeley National Lab.

4   MR. BURKE: Andy Burke, UC Davis,

5   Institute of Transportation Studies.

6   MR. ROBINSON: Tim Robinson,

7   Bridgestone.

8   MR. SUMERA: Albert Sumera, Yokohama

9   Tire.

10   MR. RUMP: Brad Rump, Cooper Tire.

11   MR. FORD: Sim Ford, Goodyear Tire and

12   Rubber Company.

13   DR. HAWLEY: Mark Hawley, ENVIRON

14   Corporation.

15   MR. GOTTLIEB: Adam Gottlieb, Energy

16   Commission.

17   MS. LLOYD-JONES: Megan Lloyd-Jones,

18   Edelman Public Relations.

19   MS. ABRAHAM: Julie Abraham, National

20   Highway Traffic Safety Administration.

21   MR. WOOD: Steven Wood, NHTSA.

22   MS. HOLMES: Caryn Holmes, Energy

23   Commission.

24   DR. WADDELL: Walter Waddell, Exxon

25   Mobil.

1   MR. TUVELL: And we've completed

2   introductions of everyone in the room. Could I

3   please ask for those of you participating on WebEx

4   to introduce yourselves, also.

5   MR. TONACHEL: Luke Tonachel from the

6   National Resource Defense Council.

7   MR. CALLAHAN: Brian Callahan, Hankook

8   Tire.

9   MR. ULRICH: Bob Ulrich, Editor of

10   Modern Tire Dealer Magazine.

11   MS. FRENCH: Sally French, Integrated

12   Waste Management Board.

13   MR. COOPER: Randy Cooper, Kumbo Tire.

14   MR. POPIO: Jim Popio, Smithers-Rabena

15   Laboratory.

16   MS. TUTHILL: Jennifer Tuthill, Natural

17   Resources Canada.

18   MR. LAMBILLOTTE: Bruce Lambillotte,

19   Smithers Scientific Services.

20   (Pause.)

21   MR. MIGUEL: Mike Miguel with the Air

22   Resources Board.

23   MS. JOHNSTON: Jessica Johnston, Air

24   Resources Board.

25   MR. AHUJA: Kamal Ahuja, ARB.

1   MR. CUCU: Mihail Cucu, Air Resource

2   Board.

3   MR. TUVELL: All right, thank you very

4   much, everyone.

5   MR. MOHAMED: Hisham Mohamed, NHTSA.

6   MS. NORBERG: Oh, more people on the

7   phone?

8   MS. MIRANDA: Ayana Miranda, Maryland

9   Department of the Environment.

10   MS. NORBERG: All right. Has everybody

11   on the phone introduced themselves at this point?

12   MR. MOHAMED: Hisham Mohamed, NHTSA.

13   MS. NORBERG: Last call for phone

14   participants.

15   MR. LAMBILLOTTE: Bruce Lambillotte,

16   Smithers Scientific.

17   MS. NORBERG: Great, thank you, Bruce.

18   All right, good morning, everyone. And

19   thank you for that exercise. I'm Tracey Norberg

20   with the Rubber Manufacturers Association. And my

21   purpose in doing that was honestly not to see how

22   well we could all cooperate to go to the

23   microphone, although you all did very well.

24   I thought, especially given that this

25   may be our last opportunity in a public forum to

1   share information and ideas on a very important

2   topic for I think all of us in this room, it

3   seemed like it would be helpful for us to

4   understand who everyone is. Many of us know each

5   other, but many of us don't. And it seemed like

6   hopefully that would facilitate an open dialogue

7   as we move forward today. So, thank you for going

8   through that exercise. I appreciate it.

9   As Ray mentioned, the Rubber

10   Manufacturers Association went through the process

11   of putting together an agenda to try and address

12   all of the major issues that we see in terms of

13   developing a consumer information rating system

14   for consumers on tire efficiency.

15   And so on the agenda there are three

16   speakers from the tire manufacturing industry. I

17   would like to also point out, though, that there

18   are additional experts from the tire industry in

19   the audience that didn't happen to get their name

20   next to an agenda item.

21   So we have a number of people here who

22   are truly the experts in their field, and they're

23   here as resources for all of us in discussing

24   these issues today. So, please ask questions.

25   If the speaker is not necessarily the

1   appropriate person to ask a certain question, we

2   may elicit someone else's input, because we do

3   have a lot of expertise in the room. And so

4   please indulge us a little bit if we need to call

5   on someone else in the room as questions are

6   asked.

7   As we go through the presentations we

8   encourage questions, especially clarification on

9   what the speaker is talking about as the

10   presentation is being given. And then maybe if it

11   would help to manage the whole flow of the

12   discussion we can have overall discussion about

13   the presentations after the speaker's concluded.

14   And then it would really be helpful at

15   the end of the day, if we can all stand it, to

16   have an overall discussion about what all this

17   information tells us, and open questions and next

18   steps. So, in terms of how the process for today

19   would work, that seems to make the most sense.

20   Just in terms of reviewing the agenda,

21   first we'd like to give an overview of ISO test

22   method. And Dan Guiney from Yokohama Tire

23   Corporation will give that presentation.

24   Then we'd like to present some data that

25   we have assembled looking at all of the publicly

        1   available data, plus some data that RMA has been

        2   able to collect from our members. And Dr. Mark

        3   Hawley will be giving that presentation. And he

        4   works at ENVIRON Corporation, which RMA has

        5   contracted with to do this expert analysis.

        6   And then after that, after Mark has

        7   concluded, Gene Petersen will give an overview

        8   from the consumer's perspective. And Gene is with

        9   Consumers Union that publishes Consumer Reports.

       10   And then after Gene, we'd like to launch

       11   into how do we develop a rating system, and what

       12   would be helpful to consumers, given the tire

       13   information and data. And Tim Robinson from

       14   Bridgestone Americas will be sharing that

       15   presentation with you.

       16   The last, the final presentation will be

       17   given by Mike Wischhusen from Michelin North

       18   America. And Mike will be talking about, from the

       19   tire manufacturer perspective, how can we get this

       20   done. And we will share that information with you

       21   last, and then, as I mentioned, we'd like to have

       22   an open discussion.

       23   Are there any questions before we get

       24   started? Okay. Well, I'd like to introduce Dan

       25   Guiney from Yokohama Tire Corporation.

       1   MR. GUINEY: Good morning, everyone.

       2   I'm Director of Technical Service for Yokohama

       3   Tire. Our headquarters is in Fullerton,

       4   California. So I am a native Californian, just

       5   wanted to let you know that.

       6   What I'm going to present today is a

       7   very beginning view of everything that I present.

       8   And there's certainly a lot of statistic and

       9   engineering behind a lot of this that I will not

      10   get into.

      11   If there is a need for that in going

      12   forward, we would bring other people to address

      13   more deeply the engineering and statistics behind

      14   a lot of what's presented today.

      15   So my topic is the rolling resistance

      16   testing; its state of the art. An overview of ISO

      17   28580, the draft international standard on rolling

      18   resistance testing, and the associated uncertainty

      19   analysis involved in rolling resistance testing.

      20   The first thing I'd like to do is for

      21   everyone's benefit is to help define engineering

      22   terminology. It is a bit confusing, I will admit

      23   that. Engineers have engineer-speak. And I want

      24   to share a little engineer-speak with you, but

      25   don't hesitate to use the terms that mean

1   something to you. But this can help you get at

2   least a foundation in the engineering portion of

3   this.

4   So, from the standpoint of F-sub-R, or

5   Fr, those are the engineering terms used to

6   describe rolling resistance force. Which is --

7   this is the definition directly out of the SAE

8   standard for testing of rolling resistance, so

9   it's the exact terminology that's used in that

10   engineering document.

11   So, rolling resistance force is rolling

12   resistance of a free-rolling tire. And it is the

13   scalar sum of all contact forces tangent to the

14   test surface, which is a road wheel, and parallel

15   to the wheel plane of the tire.

16   So if you did a force diagram, which we

17   don't have here, you would see exactly what that

18   force vector is.

19   And in this presentation in other

20   documents you might be reading you will see RRF

21   referred to. So it's okay to use RRF, but it is

22   not the engineering term.

23   Another one you'll see used, an

24   important one, is C-sub-R, or Cr, and that's

25   rolling resistance coefficient, defined as the

1   ratio of rolling resistance to the load on the

2   tire. Also in documents you will see RRC.

3   Now this one's interesting because this

4   one is truly tire energy efficiency. This one is

5   strictly force. So in the terms of tire energy

6   efficiency, the one that we use in the engineering

7   world and in terms of the standards for testing,

8   is C-sub-R. That is uniquely tire energy

9   efficiency.

10   Okay, let's talk just a little bit about

11   a tire's rolling resistance and what it means.

12   The tires roll under the vehicle's weight.

13   They're shaped as that happens, and the tire is

14   rolling through what we call the footprint or

15   contact area, the tire's being deformed. And

16   since the tire is a viscoelastic body, as it

17   deforms it has a purpose.

18   And deformation insures traction; it

19   insures comfort. But it also dissipates energy

20   when it's bending, and that turns into heat. So

21   that's where the rolling resistance force comes

22   from. And that's where the tire rolling

23   resistance coefficient's derived from.

24   So in this area, in the contact area,

25   there's bending that you can see not only

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 1    obviously in the sidewall area, but also in the

 2    tread area.  The elements are deforming, they're

 3    deforming to take the aggregate of the road.

 4    There's a lot of bending and compression going on

 5    that is consuming energy.

 6         So rolling resistance force is in this

 7    direction.  The car is say traveling in this

 8    direction.  You can see the F-sub-R is actually

 9    resisting that and going in the opposite direction

10    of travel.  So when we set tangent we mean in this

11    direction.

12         So tire rolling resistance is defined as

13    the energy dissipated by a tire per unit of

14    distance traveled, so or rolling resistance force,

15    and can be characterized in terms of efficiency as

16    C-sub-R, the ratio of the load on the tire -- the

17    force the tire is -- the resistive force the

18    tire's generating from bending, divided by the

19    load of Y.

20         So the efficiency then becomes how

21    efficient is any one tire in handling the load

22    applied on the vehicle in terms of generating

23    higher or lower force.

24         So, I see some pained look on some

25    people's faces.  Please, ask questions while we're
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 1    going along, because we don't want to not be able

 2    to answer questions.

 3              MR. TUVELL:  Ray Tuvell, Energy

 4    Commission.

 5              MR. GUINEY:  Sure.

 6              MR. TUVELL:  Dan, a couple times in your

 7    presentation you were making the emphasis or the

 8    point that rolling resistance coefficient of C-

 9    sub-R is an energy efficiency measurement.  Could

10    you clarify that?

11              MR. GUINEY:  In terms of the energy

12    consumed by the tire, the tires carry load to

13    support the vehicle.  So the coefficient is how

14    efficient in energy consumption per unit load

15    carried.

16              MR. TUVELL:  Okay.  Here's the reason

17    why I ask.  In fact, I have never found anywhere

18    in any literature that defines rolling resistance

19    coefficient just the way you used the term.

20              MR. GUINEY:  Other than the SAE

21    definition.  And if you look at the mathematical

22    formula, the only way to explain, at least the way

23    I explain it, is that way.

24              MR. TUVELL:  Okay.  But that's what I

25    wanted to clarify.  I mean this is an explanation
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1   that you're using, but it is not universally

2   agreed or understood that rolling resistance

3   coefficient is defined as an energy term.

4   MR. GUINEY: Correct.

5   MR. TUVELL: Okay, thank you.

6   MR. GUINEY: As far as my knowledge,

7   that's a true statement.

8   The measurement methods, let's go next

9   to measurement methods for rolling resistance. We

10   list three. Commonly in the USA it's called SAE

11   J1269. It is a historical test used for many

12   years in the United States. It is a multipoint

13   and a single-point test. There are options within

14   the test that allow you to test at a multiple

15   group of points to do some things that are

16   necessary at times. And there's also a single-

17   point version.

18   It's commonly used today to characterize

19   tires and be able to compare between tires for

20   tire energy efficiency.

21   Commonly used international standard is

22   ISO 18164. It is a single-point test-only. And

23   it has been used widely globally, but not

24   necessarily in the United States.

25   The new test that's under development

 1   and shortly to be published is the ISO 28580

 2   global. It's a global standard, as well. It's in

 3   development. It is a single-point test. It is

 4   not -- there are no multiple points tested. A

 5   single appropriate point.

 6   It's a new standard to be used for tire

 7   characterization purposes including, it's very

 8   important at this point in time, to introduce

 9   testing machine alignment.

10   The other procedures, the 18164 and the

11   1269 do not address themselves to aligning one

12   test machine to another. This is the first

13   procedure that I'm aware of that allows that

14   particular alignment, and we will go into it in

15   some detail.

16   Let's look at the actual tests a bit in

17   the next slide. Okay. Starting with 1269, again

18   it's a single-point test. You can see that the

19   test drum diameter is 1.5. And the smooth or 80

20   grit means you can use a smooth wheel surface,

21   which is just bare steel; or you have the option

22   of putting a texturized surface on there for

23   different engineering reasons. And both are used.

24   So they're both allowed.

25   The reference diameter for correcting

1   all results depending on your wheel diameter is

2   1.7 meters. The environment of the test is to be

3   24 degrees Centigrade with some allowed variation.

4   That's specified. The test speed, 80 kilometers

5   per hour. The test load is defined as 70 percent

6   of the maximum capacity of the tire, as defined on

7   the tire sidewall.

8   Inflation pressure of the tire is both

9   regulated and it's two different -- depending on

10   whether you're dealing with a standard load tire

11   or an extra load tire, it would be different.

12   In case of correcting the data, once you

13   make a test, 1269 is corrected for the room

14   temperature. So if there is a room temperature

15   difference within the allowed range, the actual

16   results are corrected for that. There's a

17   temperature equation that is specified in the

18   standard so you can correct the readings for

19   temperature.

20   There is no alignment procedure.

21   So as you go across, you will see

22   differences between the two. It's probably not

23   that critical that we -- you can read the chart

24   and see what the differences are, but there are

25   differences between the tests for the purpose of

1   the engineering that was designed into each test.

2   A couple of important points is the ISO

3   test is corrected for temperature and drum

4   diameter, both. So there are two corrections for

5   the ISO test. Both of them, the long-standing ISO

6   test and the new standard.

7   The other thing is, again, as we've said

8   before, this new draft standard ISO 28580 is the

9   first one that has the lab alignment procedure

10   included.

11   I just want to dwell a little bit on the

12   test machines because it's going to have an impact

13   later on if questions come up about how some

14   uncertainty comes about.

15   In this test machine, it's a laboratory

16   instrument, okay. It has electrical parts, it has

17   mechanical parts. It has an operator that sets it

18   up and runs it. So in terms of its operation, the

19   speed is controlled, this wheel is controlled by

20   the speed regulation of the motor.

21   In terms of the load applied in this

22   direction it's controlled by a load cell, either

23   it's actuated mechanically or hydraulically. So

24   there's a control over this.

25   There is also, in terms of the rolling

 1   resistance force, either a torque cell operating

 2   on the main shaft of this wheel. There can be a

 3   force transducer on the axle, and there can also

 4   be a third variant, can't remember what it is --

 5   power, power consumption by the motor.

 6   So, I just wanted to take a moment to

 7   explain in any laboratory instrument there are a

 8   number of different mechanical/electrical systems

 9   that are being controlled to certain tolerances.

10   And there is an operator interacting with that

11   test instrument.

12   So, if you can grasp that I think you'll

13   understand better why there is some uncertainty

14   left behind at the end of this presentation.

15   Next slide. We said there are

16   differences between the test procedures, so one of

17   the questions that could come up is, well, how do

18   we deal with numbers coming off the different

19   tests.

20   The way we would deal with that is in

21   terms of taking data from both tests and running a

22   correlation study to see how good the correlation

23   is, how tightly they're grouped around any given

24   shape or form. In this case it's a straight-line

25   fit.

1   This is a correlation of the SAE 1269

2   test result against the 18164 ISO result. And

3   it's for a number of different passenger size

4   standard load tires. So a lot of test points.

5   But you can see the correlation is quite

6   good. And in the case of where you break all

7   these down by, say, tire categories based on tire

8   size, or tire type or location, we find that if

9   you use all of the points there's about an 18

10   percent relationship between the two tests. So

11   you can convert one test to the other by an 18

12   percent transformation.

13   If you break these down by say size or

14   tire tread pattern or location, then it changes a

15   bit, but it's still -- the correlation is good and

16   it can be dealt with. It might be anywhere from

17   13 percent translation to a 22 percent

18   translation.

19   So I think in the engineering community

20   we feel comfortable if we've agreed in prior

21   workshops to consider SAE 1269 as a measurement

22   criteria, we can transition to ISO 28580 with not

23   a -- at least at this point in time, not a great

24   concern about doing that. So we can go back and

25   forth between the two. And someday we'll

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1        standardize on whatever makes the most sense for

2        the regulation.

3               Next slide.  Okay, now I wanted to

4        repeat what the ISO 28580 standard is focused on,

5        and this is the cover page right from the draft

6        standard.  But it is a tire rolling resistance

7        measurement method.  Again, a single-point test.

8        And a measurement result correlation designed to

9        facilitate international cooperation possibly

10       regulation building.  For passenger car and

11       medium/heavy truck and bus tires.

12              The important thing I wanted to point

13       out is here it refers to correlation.  When I go

14       into the next few slides we're going to use a word

15       that's a little easier to understand.  I've said

16       it before, alignment.

17              Okay, so alignment is a little more

18       comfortable term for most people in terms of how

19       do I align with one lab to another so that I can

20       use results from both.

21              So, if you will permit, we will talk

22       about alignment going forward.  But it is

23       actually, what they're talking about is

24       correlation here.

25              Next slide.  Okay, let's look at the
```

1   alignment method now. And I will share with you

2   what is available and present -- and be able to

3   answer questions on what's on the slides. Some of

4   it, because the standard isn't published, I

5   couldn't just put everything up there, because

6   it's not public information. But whatever we feel

7   comfortable that can be shared, or has been shared

8   prior, we're sharing again now.

9   So, in terms of alignment the very first

10   step, and it's a very critical step and I'll

11   explain why, is a reference lab is picked, Lab R,

12   that creates two groups of alignment tires.

13   The first criteria in the standard for

14   that lab is the reference lab machine

15   repeatability must be less than or equal to .05

16   kilograms per ton. Also the two groups picked

17   must have C-sub-R values or rolling resistance

18   coefficient and tire size or load index with a

19   sufficient amount of separation so that this

20   alignment is fairly stable and has a good meaning

21   to it.

22   One of the things I want to point out is

23   this is a very critical statement, that the

24   machine repeatability be equal to or below a

25   specific value.

1   What that means in engineering-speak is

2   if a machine is having repeatability issues you

3   can't go any farther. If a laboratory instrument

4   is demonstrating repeatability concerns above a

5   certain level everything else after that, or

6   analyzation of data after that could be coming

7   from an unstable machine. So there's really no

8   purpose in going forward.

9   This is a very critical part of the ISO

10   standard. So that's one thing you want to always

11   remember is step one is almost like a rite of

12   passage. You have to do this before you can go

13   any farther.

14   The second part of the standard comes

15   from the candidate labs, or the labs that are

16   receiving the reference tires. Could be lab A,

17   lab B, lab C, whatever. It could be a tire

18   company lab, could be a private vendor of rolling

19   resistance testing.

20   They receive at least two alignment

21   tires, two groups and two tires in each group.

22   And the repeatability test is the next thing that

23   lab does.

24   So, not only did the reference lab have

25   to pass that standard before they did anything

1   else, and establish these groups, the candidate

2   lab has to do the same test.

3   In developing the standard the

4   engineering community decided that the candidate

5   lab must pass a standard of 0.75. So the

6   reference lab 0.050, candidate lab .075.

7   Now, there was an allowance -- there's

8   no allowance provided here if this standard isn't

9   met. If the reference lab doesn't meet that

10   standard they got to work on the machine. They

11   got to figure out what is causing repeatability

12   issues and go back and correct those until they

13   achieve this.

14   So, the candidate lab, there was an

15   allowance added that if 0.75 is exceeded there was

16   one option put in that additional repeats can be

17   done on the reference tires, replicate testing,

18   test the same tire many times, to try to bring

19   down that variability and uncertainty around any

20   given test result.

21   But that's obviously done at a cost

22   penalty for the lab. And I'm sure that while this

23   is in there, there could be a decision made in any

24   given lab to do what the reference lab does, and

25   that's find the source of the repeatability issue

1   and correct the electrical/mechanical issues going

2   on.

3   So, once now the candidate lab has their

4   measurements completed and have passed the

5   standard, they derive a linear alignment formula

6   just in the standard formula of Y equal AX plus B.

7   In the case of each lab we're going to look at,

8   how that's done in some of the next slides.

9   Finally, the standard requires that

10   these candidate labs, once they've completed their

11   testing and they have this alignment formula, they

12   must report to their customer, whoever's asking

13   for the data, aligned results.

14   So the standard goes another step

15   forward. Even though I know the alignment, I must

16   now correct or transform my test results to

17   aligned results. So that us in the community of

18   customers can say we have some relative ground

19   here of commonality between any lab that's

20   providing the data.

21   Had the standard stopped short of this

22   you wouldn't necessarily know the alignment had

23   been applied. But it does go on and say

24   specifically that any test results provided by

25   this laboratory, these candidate labs, must be

1   aligned results.

2   Okay, so let's get into -- oh, you know

3   what happened, Tracey? When you put the RMA

4   format on it moved my lines around. But that's

5   okay.

6   In your copies I hope you have -- it's a

7   shame, but anyhow, let me --

8   (Parties speaking simultaneously.)

9   MR. GUINEY: -- explain what went on

10   here. I created a format without the cover text.

11   When you slap the cover text on, it moves slides

12   around. And what happens is the nice little

13   graphics got messed up.

14   But anyhow, this line, this blue line is

15   supposed to be right here. This blue line is

16   supposed to be right here for a visual aid, only.

17   This red line is supposed to be here, and this red

18   line is supposed to be here.

19   So what do we have now? What have we

20   plotted here? Okay, well, this is step one of

21   that candidate lab's responsibility. This is

22   where the candidate lab -- and this is real data

23   done by real testing labs to the ISO 28580

24   standard. This is the real deal going on here.

25   This isn't hypothetical data, it's real data.

```
1              So, the standard reference tire is

2       described as a rugged trail TA, that's the tire

3       model.  And that's alignment tire one.  Tire paw

4       AWP is alignment tire two.  And these are

5       different in terms of their rolling resistance

6       coefficient, as we mentioned, in terms of their

7       size tire.

8              You can see the rugged trail TA

9       generally is in this range, and that the -- for

10      both labs.  And that the tire paw AWP is at a

11      lower level.

12             So let's look now at lab B and the

13      reference lab that created lab B's tires for an

14      example.  These are the actual results.

15             So the reference lab results -- sorry,

16      I'm shaking a bit, but that's my own hands --

17      these are the three results on three tires --

18      excuse me, one tire tested three times.  So it's a

19      single tire tested three times.  Rugged trail TA,

20      one tire, three repeats of the same tire at the

21      reference lab.

22             This is three, the same exact three

23      tires tested at lab B.  So the tires were actually

24      moved between the labs and tested, the exact same

25      tire, tested -- one tire test repeated three
```

1   times.

2   So what you can see here, of course the

3   blue line should be here, is the different result

4   between unaligned between the two labs. What's

5   involved here is the repeatability of the machine

6   testing the same tire three times.

7   Okay, now in the case of lab H, same

8   tire model, but a different tire. This is the

9   reference lab result, and this is the candidate

10   lab result. So you can see that the disagreement

11   was in a different direction for lab H, it wasn't

12   in the same direction. So the relatively

13   alignment between the two labs is different.

14   Again, if you go to the second alignment

15   tire, the reference lab is here, the candidate lab

16   is here. So, this is their alignment difference.

17   This is the machine variation testing one tire

18   three times.

19   And I'm sorry it's covered up because

20   everything slid around, but this is the reference

21   lab for lab H. And they have a relatively no

22   misalignment at all, just on the first test.

23   So now what do we do with this

24   information? Well, that's where that linear

25   alignment formula is created. So, they take --

1   lab B will take this result for their results, and

2   they know the results from the reference lab.

3   They will take this result for their result and

4   they know these results from the reference lab,

5   and they just do an XY fit of that data to come up

6   with a linear line through those two data points.

7   So you plot the reference lab on the X

8   axis, and you plot the candidate lab on the Y

9   axis, and you just draw a best fit line through

10   them.

11   What happens is you can then come up

12   with two different parts to the formula. B is the

13   offset between the labs if the load was taken to

14   zero. A is the relative gain, or the slope of the

15   line, between the two labs. So knowing both the

16   offset and the gain, lab B can now align itself to

17   the reference lab.

18   So, if you have any questions about this

19   part, this is step one, real data. The important

20   thing to see here is the two labs testing, the

21   test results are different. The other thing is to

22   see that the repeatability of the machines are not

23   exactly the same.

24   Important point. The reference in all

25   cases, even though this amount of variability that

1   you see, the reference lab must pass the same

2   standard. So whatever variability it was

3   experiencing when it developed these tires, it

4   still passed this requirement. So its

5   repeatability was correct.

6   MR. PETERSEN: Dan, Gene Petersen with

7   Consumers Report.

8   MR. TUVELL: Gene, could I ask you to

9   come to the speakerphone.

10   MR. PETERSEN: The question I have is in

11   the selection of the tires. Of course, I think

12   you want a large enough span so you have a pretty

13   good correction factor or linear regression. How

14   did they go about choosing these tires? Is it as

15   a result of that span that they're looking for?

16   Or is there some other consideration?

17   MR. GUINEY: According to the standard

18   it is the span.

19   MR. PETERSEN: Okay.

20   MR. GUINEY: So in the standard there's

21   not an additional prescription; it only prescribes

22   that the two tires need to be separated by a given

23   amount of rolling resistance coefficient.

24   MR. PETERSEN: Okay. So my second

25   question is the tires that are tested, they must

1   fall within this span to utilize this correction?

2   MR. GUINEY: They must be at least that

3   -- it must be at least the specified distance

4   apart. It could be more, but it can't be less.

5   So, -- I don't have it in the

6   presentation, but I think the standard for

7   passenger is 3 kilograms per ton.

8   MR. PETERSEN: Okay.

9   MR. GUINEY: That's the minimum distance

10   that they have to be separated by to be allowed

11   reference tires.

12   MR. PETERSEN: And while I'm up here, I

13   understand this is a proposal.

14   MR. GUINEY: Yes.

15   MR. PETERSEN: Is there any sense as to

16   what stage it lies in right now? Would you know

17   about that?

18   MR. GUINEY: Some -- I think we're

19   close, but I'll let somebody else answer that.

20   MR. ROBINSON: Yes, Tim Robinson from

21   Bridgestone. And our company is sponsoring the

22   development and supply of the ARRT tires.

23   And to answer your question, Dan's

24   exactly right, the span of rolling resistance

25   coefficient will be sufficient to cover any

1   foreseeable range within the market of what we see

2   now in the U.S. as far as rolling resistance

3   coefficient for force is concerned.

4   In addition to that, those tires are

5   also developed, so they also covered the total

6   range of load indices, the load carrying

7   capability for radial passenger car tires.

8   MR. TUVELL: Ray Tuvell with the Energy

9   Commission. Thanks, Tim. Just for clarification

10   purposes, and I want you to correct me if I'm

11   wrong.

12   So Dan has referred to the reference

13   tires that are specific to the 28580 protocol.

14   And the important point here is that Bridgestone

15   made specific reference tires for that purpose.

16   MR. ROBINSON: Right.

17   MR. TUVELL: These are not just tires

18   pulled off the street and used. They are designed

19   and built specifically to be reference tires for

20   the ISO 28580 process.

21   And so I just wanted to ask the

22   question, I believe it's understood that those

23   tires, in fact, have been produced and are

24   currently available, is that correct, Tim?

25   MR. ROBINSON: They have been produced

1   and they will be available. We had to scale up

2   production to align with the release of the ISO

3   28580 standard.

4   But the other purpose of these ARRT

5   tires is to make sure that they are consistent as

6   possible. So they will be built under controlled

7   conditions such that we remove as much tire

8   variability as possible.

9   So what you'll be seeing in the lab

10 alignment is really a test repeatability, not tire

11 variation.

12   MR. GUINEY: So, it is a little

13 complicated sometimes. Good point, good point,

14 Ray.

15   MR. MEIER: It's Alan Meier, Lawrence

16 Berkeley Lab. I'm curious, what's the sigma on

17 these reference tires? I mean it was less than

18 that, but what was it actually?

19   MR. GUINEY: Honestly, I don't know. It

20 was not reported. But we do know that it was

21 below it. And when the standard's published, I'm

22 not sure what the policy is, but the research

23 behind it, I'm not sure what happens with all of

24 the research behind it, all I can say is it passed

25 that standard.

1   MR. MEIER: I'm just trying to look at

2   that range and especially the BR. Seems like it's

3   a fairly wide range.

4   MR. GUINEY: You actually have to look

5   at data and derive the data to --

6   MR. MEIER: Yeah, I know. But there are

7   only three tires, so it's hard to --

8   MR. GUINEY: Yeah, right, exactly.

9   MR. TUVELL: Ray Tuvell with the Energy

10   Commission. I want to make a comment, also, about

11   the sigma, the .05 and the .075 standard

12   deviation, and please clarify or correct me if I'm

13   wrong about this.

14   For passenger tires we would expect to

15   see rolling resistance coefficients in a range of

16   6 to 15, roughly, spans, rolling resistance

17   coefficients we would expect to see passenger

18   tires, all passenger tires in the current

19   marketplace falling roughly within that range, for

20   the sake of argument.

21   And that being the case, then the .05

22   that we're seeing there is an accuracy of better

23   than 1 percent. And the .075 slightly more than 1

24   percent.

25   And I just offer that explanation to put

1   this in context. Those are standard deviation

2   numbers, but we're talking about fairly accurate

3   standard deviations here. We're down in the 1

4   percent range of accuracy, which is very very

5   important to this subject.

6   MR. WISCHHUSEN: Excuse me, Mike

7   Wischhusen, Michelin. Two points. Gene asked a

8   question that didn't get answered yet. The status

9   of the ISO 28580 is nearing the final stages of

10   its approval. We anticipate final approval toward

11   October of this year. So it's on the path and

12   it's on its way.

13   Second point. Recall these

14   measurements, I believe, were they done with -- I

15   don't know, excuse me -- the range Ray is talking

16   about, the 6 to 15, those are measurements using

17   J1269, okay.

18   So remember Dan's slide three or four

19   slides ago about the offset between SAE measures

20   and ISO measures. So that range, those numbers

21   will change. It'll be a simple offset, but it

22   won't be the number six and it won't be the number

23   15 when we're actually testing the 28580.

24   MR. GUINEY: That's correct.

25   So we -- go ahead, sure.

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1   MR. TUVELL: Ray Tuvell, Energy

2   Commission. I appreciate that clarification,

3   Mike. The point I was trying to use it to

4   illustrate that range was the level of accuracy of

5   the -- we're still talking in the 1 percent range.

6   Thank you.

7   MR. GUINEY: Yeah, that is an important

8   point. The foundation for everything we do from

9   here on is -- oh, I'm sorry -- the foundation for

10   everything we do from here on out is based on

11   meeting these requirements. Very important point.

12   So I think we can go to the next slide.

13   Yeah. It's in the right place, but I know

14   something else will be out of line. But, anyhow.

15   This now is step two. So what's

16   happened in step two? Step one we got the

17   alignment formula finished. Step two is, in the

18   case of the development of the standard 28580.

19   Both lab, the reference lab H and the

20   candidate lab B, reference lab created eight

21   additional groups of tires in different tread

22   patterns, different load indexes, different aspect

23   ratios, different ODs, different rim diameters,

24   different speed ratings, to try to get as much

25   dispersion as possible to actually apply the

1   standard across the range.

2   So these models now are three tires in

3   each model tested once. On the reference --

4   creating the reference line we tested one tire

5   three times. And then put a line through it to

6   come up with the alignment equation.

7   So what you're seeing here now let's

8   just talk about the A349G tire. You're seeing

9   that lab H got a rolling resistance coefficient

10   from the three tires tested once in this range.

11   When the tires were shipped to lab B,

12   they got an answer in this range.

13   So now we have eight different estimates

14   of how much difference there can be in between

15   machines. So we have some that have a relatively

16   larger difference; some that have a relatively

17   smaller difference. The only thing changing,

18   since it was the same machine, is the tire sample

19   or population, itself.

20   So three tires in each one of these were

21   tested one time, and this is the data derived from

22   it.

23   So what you can see is that this is

24   unaligned data. We would like to be able to align

25   this and actually bring these differences down so

 1   that lab B and lab H are on a common footing based

 2   on a linear alignment between the two labs.

 3   What's not in here, it's important to

 4   say, this is strictly machine alignment. There is

 5   no alignment for product variation. So, if the

 6   three different tires from this model, A349G, have

 7   product variation. So we are not aligning product

 8   variation. We are only aligning machine

 9   variation. That's another important point.

10   Okay, go to the next slide. Don't hit

11   the button yet. Now, what's happened in this step

12   is we've actually taken this data from the prior

13   slide and we've applied the alignment equation to

14   it. So this is now aligned data.

15   So however the linear alignment formula

16   was calculated, it's now been applied to the data,

17   and that disagreement has been removed.

18   And what you can see is now not all the

19   lines are pointing in the same direction, which is

20   the alignment formula at work. So, all the lines

21   before were going in this direction. And some

22   still do. But because of the alignment, some --

23   because of the improvement in alignment, some of

24   the lines go in a different direction. So they're

25   actually a different relationship now.

41

 1   But, as you can see, there is still some

 2   residual misalignment. You cannot come up with,

 3   in terms of an alignment method that will remove

 4   every bit of machine alignment. But a lot of the

 5   alignment was addressed. Certainly the large

 6   portion of it. I think in this case, we can get

 7   down to the formula here, but this residual

 8   alignment or disagreement in any one tire model is

 9   going to exist, even after alignment.

10   So what we have to do to get to

11   something that we call in the engineering world as

12   the uncertainty around any given test measurement

13   after alignment is we take the average

14   misalignment and calculate average misalignment

15   after alignment. And that is this term in the

16   uncertainty equation.

17   So the average residual misalignment in

18   all eight models is .08. I don't have up here

19   what it was before alignment, but it was in the

20   neighborhood of .5. So this number, -- just under

21   .5 if I remember correctly. The alignment has

22   improved the average misalignment by a factor of

23   five or six or seven.

24   The next thing you do to calculate

25   uncertainty is you take the variability of all of

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1   these misalignments. Remember the first thing was

2   the average misalignment. That's this number.

3   The second thing you do in engineering

4   terms to calculate uncertainty is you take the

5   variability of these alignments, that's this term,

6   .24. That becomes the standard deviation. When

7   you take 1.96 times the standard deviation you

8   describe 95 percent of the population that that

9   variability was derived from.

10   So the total uncertainty remaining after

11   alignment is .56. .08 of it came from the average

12   misalignment of these data points that remained

13   after we aligned the machines. And .24 times 1.96

14   gives us 95 percent confidence, or 95 percent of

15   the total population of the variability of these

16   alignments. I know it's a little bit hard to

17   understand.

18   So the uncertainty around any given test

19   point now, or of the alignment, because lab B is

20   going to be reporting data, in this case for these

21   models tested, is .56.

22   How do we then evaluate for data

23   reporting? How do we deal with this uncertainty?

24   How can engineers deal with that remaining

25   uncertainty?

1   Well, the way we deal with it is we kind

2   of look at categorizing test results, categorical

3   treatment of data.

4   So what the ISO committee did was they

5   said what would be an appropriate way of defining

6   the category or bin width around which data is

7   reported, such that this uncertainty can be dealt

8   with. And while I don't present it here, you've

9   now taken and gone to a question about is you have

10   this uncertainty around test data as you move

11   closer to an upper limit or a lower limit.

12   Say a maximum bin rating, or a lower

13   limit bin rating, what is the risk as you approach

14   that bin width. To do that, the engineers came

15   and did studies and found out that basically when

16   you get to a total of five sigma, two sigma was

17   used in the uncertainty analysis but when you get

18   to five sigma the risk associated with getting

19   close to a bin limit, an upper limit or a lower

20   limit, is low enough that it's appropriate to stop

21   at five sigma.

22   So, what we do to get the total bin

23   width is we multiply this uncertainty, which is

24   .56, times 5 divided by 2. 5 sigma, but we

25   already used sigma here, so the remaining

1   multiplier is 5 divided by 2. Okay. A lot of

2   engineering terms.

3   But this ends up being the bin width.

4   So, .39 is, if you were going to accept, and you

5   have to accept that there's uncertainty remaining

6   in these test results, this particular testing of

7   eight models, three tires each, at two different

8   labs with say that a bin width of 1.39 kilograms

9   per ton or rolling resistance coefficient, would

10   allow you to be confident that you could contain

11   these different ratings in bins that are this

12   wide. About 1.39.

13   So what happens is, and you can hit the

14   -- as that bin width would move you can include

15   different tires in the model.

16   So, for example, here now you can

17   include these two within this bin width and be

18   confident that they are in that bin.

19   But if you had a test result that was

20   very close to the bin limit, the risk would go up.

21   You could, in fact, as you get closer to the bin

22   limit, because of the uncertainty that's there,

23   actually have a true value that's outside the

24   bin.   So engineers use categorical information

25   to deal with uncertainty.

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 1   So, just to sum up, the ISO 28580 deals

 2   with lab alignment. And the way it was dealt with

 3   is through a linear fit. So this is aligned data,

 4   but there is, even with that alignment we need to

 5   make sure that it's recognized that there is

 6   residual uncertainty around any given test result

 7   from any given tire. From a machine that met the

 8   limits on repeatability, from an aligned result,

 9   there's still residual uncertainty.

10   You cannot be sure that any one of these

11   test values is exactly in that point. And it's

12   described in statistics this way. At a future

13   meeting we could go into how this is all derived

14   and bring a much more knowledgeable person than I

15   here, how to do this. But in essence, we are

16   including a total of 5 sigma plus the average

17   misalignment that remains to get to this bin

18   width.

19   Question.

20   MR. TUVELL: Rick, Ray Tuvell with the

21   Energy Commission. Now, I'm pretty sure I don't

22   have the current draft version of 28580, and so my

23   questions are going to go to that.

24   The last version I had had no mention

25   whatsoever of anything associated with bin widths.

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1                  MR. GUINEY:  No, the standard, it does

2       not address itself.  It's the derivation of the

3       standard that we needed to review these issues to

4       derive the standard.

5                  MR. TUVELL:  Okay.  I just wanted to

6       clarify that.  So, --

7                  MR. GUINEY:  That's correct.

8                  MR. TUVELL:  -- and it's not anticipated

9       that even in the final version of 28580 there's

10      going to be any mention of this subject of bin

11      width or anything of the sort?

12                 MR. GUINEY:  None whatsoever.

13                 MR. TUVELL:  Okay, good.  Now, let me

14      see if I understand these numbers correctly and

15      can get them in context.  And I believe I do.

16                 So, the -- but please correct me, and

17      that's why I'm asking this.  The 1.39 you're using

18      there is essentially a rolling resistance

19      coefficient unit.

20                 MR. GUINEY:  Exactly.

21                 MR. TUVELL:  Okay.  And so back to my

22      comment about the range of numbers that we would

23      expect to see in passenger-type tires.  Again,

24      with Mike's correction of what 28580 will do in

25      shifting things, if I'm dealing with numbers in
```

1   the 6 the lowest to 15 in the highest, that 1.39

2   that you're using when applied to like a 6 is

3   talking about what, 20-plus percent variation in a

4   tire?

5   In other words, if I measured a tire and

6   its rolling resistance coefficient turns out to be

7   around 6, you're claiming that the bin width, the

8   level of accuracy around a number like that is

9   1.39 around it, which is on the order of a 20-

10   percent-plus error rate.

11   MR. GUINEY: And I mentioned something

12   that is involved that maybe isn't quite

13   understood, okay. The absolute uncertainty is

14   .56. But what the engineer needs to do is in

15   order to report any data, he needs to know the

16   risk of reporting that number associated to some

17   requirement.

18   So, to answer your question directly,

19   because, if you told the engineer, I want a tire

20   that is below 9, recognizing this uncertainty, his

21   next question would be, what is the risk that

22   you're willing to tolerate to be wrong.

23   So, added into this is this risk factor.

24   Its 1.39 includes both the absolute uncertainty

25   plus, we decided, I think it was a 5 percent risk

48

 1   is tolerable to be off of the actual limit that

 2   you specified.

 3   So the bin has say an upper limit of,

 4   let's say the bin has an upper limit of 10, down

 5   to 8.5. As I'm operating in the middle of this

 6   bin there's very low risk that I'm outside that

 7   actual bin, that category, saying it's a 8, like a

 8   one-star tire, or two-star, a three-star tire,

 9   whatever number category you want to call it.

10   As you approach the limit of that

11   category the risk goes up substantially that

12   you're not in that bin anymore. So, to answer

13   your question directly, the uncertainty plus the

14   risk associated with being wrong is what derives

15   the 1.39.

16   MR. TUVELL: Okay. Ray Tuvell, again,

17   with the Energy Commission. Here's why I'm going

18   with this, Dan. You took a leap to the bin here

19   that I'm having a hard time going to. I'm back

20   here with I've got a machine, either reference of

21   a candidate machine. I ran a test tire. I came

22   up with a number that I then calculated as being,

23   for the sake of argument, a 6.0 rolling resistance

24   coefficient.

25   Now, the level of accuracy on 28580 for

         1   my candidate machine said I'm within 1 percent one

         2   way or the other. Because I had the three tire

         3   test repeatability that I had to prove within 1

         4   percent.

         5   So right now I know I'm within 1

         6   percent.

         7   MR. GUINEY: On the --

         8   MR. TUVELL: On the tire.

         9   MR. GUINEY: On the reference tire only.

        10   MR. TUVELL: Well, on the reference tire

        11   it's a .05, and so it's better than 1 percent, on

        12   the reference lab. And then the candidate

        13   facility it's .075. So I'm still within 1

        14   percent.

        15   MR. GUINEY: Right. But, --

        16   MR. TUVELL: And so I know my machine by

        17   28580 is giving me numbers that are accurate

        18   within 1 percent.

        19   MR. GUINEY: Yes, yes, that's true. But

        20   you also have to remember that the machine will

        21   interact with any given tire that's applied to it.

        22   So, in the case -- that's why we picked a broad

        23   range of rolling resistance values. We also

        24   picked a broad range of tire types.

        25   And the machine repeatability may change

1   a bit depending on the tire that's applied. But

2   your statement is true. For the reference tire

3   test, for the rugged trail TA and the AWP, three

4   repeats on that machine, it was below that number.

5   But the machine, itself, could change, that

6   repeatability could change a bit depending on

7   which tire you put on that machine.

8   I know it's complicated, but 1 percent

9   isn't just the -- isn't just the absolute number.

10   MR. TUVELL: And you're saying that this

11   is based on three tests on the same tire that you

12   have this data?

13   MR. GUINEY: No, this is just -- no,

14   this is, now when we got to this chart it was

15   three tires, one test each.

16   MR. TUVELL: Okay. So now it's becoming

17   better for me to understand. So the variability

18   could well be tire to tire to tire. The three

19   tires, themselves, could be the variability not

20   the test machine?

21   MR. GUINEY: Not in here. No. That

22   variability that you just mentioned is not

23   included in this analysis. It's excluded from

24   this analysis.

25   MR. TUVELL: You see where I'm having a

1   hard time with this? I mean I'm starting out with

2   an ISO 28580 test process that basically insures 1

3   percent accuracy. And somehow it leapt to close

4   to 20 percent of a problem.

5   MR. GUINEY: Yeah. And, Ray, I do fully

6   appreciate that it is somewhat hard to understand.

7   And I think our hope would be that we would have a

8   meeting on that very subject and get there.

9   MR. TUVELL: Well, yeah, I mean this is

10   important. I mean should such a problem exist, I

11   would have expected this to have been revealed in

12   the 28580 process. And I would have expected that

13   the people on the committee would say this is

14   unacceptable, to stop at this point, we need to

15   hone this down.

16   MR. GUINEY: The purpose of the

17   committee was to establish a test standard, not

18   how to apply the test standard to produce ratings.

19   That's what we're getting into now. How do you

20   take a test standard and apply it meaningfully to

21   a rating system. That's not up to ISO 28580.

22   It's up to another -- this community or group,

23   whatever we're going to do.

24   MR. TUVELL: Well, maybe that's the

25   clarification then that I have to hear. I thought

1   that your presentation was specifically designed

2   to talk about the accuracy of the testing process.

3   MR. GUINEY: And it does, yes, that's

4   true.

5   MR. TUVELL: Okay, but I think what I'm

6   hearing you saying is now you're taking the leap

7   on this slide to applying it to creating a bin

8   system. And that's where, I think, we're -- my

9   confusion is arising.

10   MR. WISCHHUSEN: Can I have the mic?

11   Mike Wischhusen, Michelin.

12   A couple points. We got to remember

13   what a standard is. I mean Dan said a standard

14   sets a test procedure. A standard does not create

15   a measurement system for a regulation. I mean

16   let's remember what 28580 is.

17   28580 gives us a tool from which we can

18   create a regulation. Okay. That's the role that

19   the ISO standard plays.

20   Now, part of your issue, you're jumping

21   from what you're perceiving as a 1 percent

22   tolerance or error band around an individual

23   measurement. This is addressing measurements on

24   two different machines in two different

25   laboratories. Okay. And I mean, that's just a

1   fact of life. Two different machines don't

2   measure the same number.

3   So what this analysis is addressing is

4   how we, as users of the standard, now have to take

5   into account the fact that those two laboratories

6   don't measure the same number. I mean that's what

7   we're doing.

8   It's also an error to look at that 139

9   as an error, or an inaccuracy in the system. It's

10   simply a statement of fact. It's a probability,

11   you know, how sure am I that the number I state is

12   the actual measurement, okay.

13   So, even -- forget the concept of bins,

14   okay. If you report a 6.0, okay, that 1.39 is

15   then a measure of a certainty you have that 6.0 is

16   the correct number. It doesn't say your number is

17   between 4.6 and 7.4. That's not what that number

18   says. It's not an error band.

19   MR. GUINEY: And let me repeat what it

20   does relate to. The uncertainty around any given

21   test result on this, the residual uncertainty

22   around any given test result on this chart, at a

23   95 percent confidence limit, 5 percent chance of

24   being wrong, is .56.

25   But, when you ask the engineer the

1   question is how certain are you where it is in

2   relation to some type of a standard or a rating,

3   he has to add in the risk with which you could be

4   wrong on top of this.

5   That's where we went from 2 sigma to 5

6   sigma. To lower the risk to an acceptable level

7   such that when I report my rating, not the actual

8   test result, the only way I can deal with all this

9   uncertainty and risk is to give you where I think

10   it lies with a 5 percent chance of being wrong.

11   So, that's where this concept of -- you

12   got to deal with it categorically. You cannot

13   easily deal with it numerically. You have to deal

14   with it categorically because of these issues,

15   which are real issues, in being wrong with what

16   you told someone.

17   MR. TONACHEL: This is Luke Tonachel

18   from NRDC. I wondered if I could go back to Mike

19   Wischhusen's comment, that, Mike, if you could

20   just help me understand.

21   You mentioned that 1.39 doesn't mean,

22   it's not an error band. If you could provide sort

23   of an interpretation of what that 1.39 means?

24   MR. WISCHHUSEN: Yeah, I'm probably the

25   wrong person to do that. I think, you know, we --

1   let's do a little bit of a sanity check here,

2   okay.

3   We're not statisticians, okay. The

4   statisticians did this work. I just have the

5   feeling we're spinning our wheels by questioning

6   the statisticians' work, okay.

7   But, I mean anybody who has any

8   experience with laboratory measurements, technical

9   measurements, scientific measurements, you know,

10   the concept of uncertainty is there. I mean you

11   simply cannot say I measured 6, therefore it is 6.

12   I mean that is a concept that has existed in the

13   technical world since we've been making

14   measurements.

15   And I think perhaps what is needed is a

16   statistical expert to explain this stuff to us.

17   Because I take it there are no statisticians in

18   the room, because no one's jumping up to explain

19   this.

20   MR. TONACHEL: Yeah, I guess, I

21   appreciate that, Mike. The thing that I'm trying

22   to get to is that ultimately this comes down to

23   what does people -- everything is going to have

24   some level of uncertainty in it -- and what is the

25   level of uncertainty that people are comfortable

1   with under different types of rating scenarios.

2   MR. MEIER: This is Alan Meier. I have

3   a couple questions here. First of all, I

4   appreciate the presentation today. I think it's

5   wonderful. We can actually focus on the real

6   question.

7   First of all, let me make sure I

8   understand it. Those uncertainties are based on

9   three tire tests, is that correct?

10   MR. GUINEY: Yeah. Now, you have to

11   remember the formula is the average misalignment

12   remaining, which is .08. So you take all eight of

13   these and you average -- you take the average

14   misalignment between the two labs, that's the .08.

15   And then you take the variability of the

16   misalignment, that's the .24. And you multiply it

17   by 1.96 to get the 95 percent calculation of -- or

18   5 percent not explained.

19   So we have not included product

20   variation in this. Product variation is excluded.

21   It is strictly the average misalignment plus the

22   variability of misalignment, not the variability

23   in this box, itself.

24   Because you want to know what is the

25   uncertainty with regard to the lab. Not throwing

 1   in product variation.

 2   MR. MEIER: So if we increase the number

 3   of tires in each of those samples, does that

 4   increase -- decrease the uncertainty?

 5   MR. GUINEY: No. What it could do is it

 6   could -- this very uncertainty we're talking about

 7   is where is the center of the proxes CT01 tire.

 8   Where -- if you had 100 of these, or 200 of these,

 9   where --

10   MR. MEIER: I understand.

11   MR. GUINEY: -- where is the central

12   value for that tire model. If you increased from

13   three to 20, you're going to get a much better

14   description of where that central point is.

15   So all you would do is you may improve

16   the alignment, the average alignment number. And

17   you may slightly change the average alignment --

18   or the variability of the alignment.

19   MR. MEIER: Okay. I'm going to come

20   back to that one later. But, what if -- I guess

21   the next question is you assumed kind of a normal

22   distribution.

23   An alternative approach would be to say

24   how confident can I be that the number that I

25   report is less than, the actual value is less than

1   what I report.

2   MR. GUINEY: Yes, okay.

3   MR. MEIER: Which would, I think, if I

4   understand my -- sub statistics, then I don't need

5   to think about so much a normal, as more of a one-

6   tailed distribution and other kinds of

7   requirements can apply. And actually you can use

8   a much -- you actually have less uncertainty, or

9   more confidence about the value reporting.

10   So that if you avoid this bin approach

11   and just say how confident can I be that the

12   number is below the number that I'm reporting,

13   then you actually have a greater certainty.

14   MR. GUINEY: Yeah, and that's what we

15   talk about in terms of you've got to ask the

16   engineer how certain are you with respect to some

17   number.

18   MR. MEIER: Yeah.

19   MR. GUINEY: So the bin only is derived

20   from, can you tell me, is it below that or above

21   that.

22   MR. MEIER: Yeah, but --

23   MR. GUINEY: And he'll say -- he'll

24   say --

25   MR. MEIER: But just sort of for the

1   record, if you don't go the bin route and say how

2   confident can I be that the reported value, the

3   actual value is less than the reported value.

4   Then your confidence increases with the same data,

5   because you don't have to worry about the other

6   side of the distribution. You don't have to worry

7   about it being --

8   MR. GUINEY: What is the risk that the

9   tire is over-graded is basically what you're

10   saying?

11   MR. MEIER: Yes, yes.

12   MR. GUINEY: And you can do it that way.

13   MR. MEIER: Yes. And then your

14   certainty increases, probably doubles.

15   MR. GUINEY: Well, if you use the 5

16   sigma limit you're going to end up -- that

17   answer's going to be half of this bin width.

18   MR. MEIER: We'll talk about that later.

19   MR. GUINEY: Yeah.

20   MR. WISCHHUSEN: Mike Wischhusen,

21   Michelin, again. Just make a comment, try to --

22   let's put this all in context.

23   You know, we're here discussing AB-844,

24   which mandates the creation of a consumer

25   information system about the impact of tires on

1   vehicles' fuel efficiency.

2   No one loves a rousing discussion about

3   statistics more than I do, but let's keep in mind

4   the big picture here, what we are here to do. And

5   not get sidetracked about, you know, some very

6   very small effects on what we're doing. Because

7   there's a lot of information to be presented

8   today. And we're not making a lot of headway

9   getting through it. Thanks.

10   MR. GUINEY: Anyhow, we can go to the

11   next slide.

12   MR. TUVELL: I have a comment first.

13   MR. GUINEY: What we want to do is share

14   with you another lab pair, just so you had two

15   examples of this, not just one.

16   MR. TUVELL: Yeah, can I just make one

17   more comment. And I appreciate your comment,

18   Mike, but whether we like it or not in 844 it also

19   directs us to adopt a test protocol. And

20   significant to the test protocol is we're all

21   homing in one 28580.

22   And if there's some representation that

23   28580 yields numbers that have a high span, or in

24   other words a low degree of accuracy, we all need

25   to know that.

1   Now, I'm not a statistical expert,

2   either. And I don't pretend to be. But I look at

3   the information that's being presented today, and

4   I'm interpreting that as a very high degree of

5   variability.

6   And this is the first time I've seen

7   anything that even remotely suggests that on

8   28580. That I've always been led to believe, in

9   fact, it's the exact opposite. It's the exact

10   opposite, that they worked so hard to refine it to

11   insure a very very low level of variability. Not

12   only repeatability in individual labs, but lab-to-

13   lab variability.

14   And so I think maybe what's happening

15   here is the subject is being complicated by

16   reducing it to a statistical, you know, analyses,

17   and you recognize that. I certainly recognize

18   that.

19   But I'd love to get people from the

20   28580 committee who's responsible for this lab-to-

21   lab variation issue and sit down with them and

22   say, guys, how did you resolve this and what did

23   you come up with. Why did you stop where you are

24   now on this and say let's go ahead and adopt this

25   standard.

1   MR. GUINEY: And to speak on behalf

2   of -- I was at some of the meetings and understood

3   what they did. They were responsible to come up

4   with a test protocol that allowed single-point

5   testing, and would address lab alignment. And

6   they finished their work.

7   This issue that we're talking about here

8   comes into once you take those results and apply

9   them to some standard or some requirement, the

10   uncertainty with which being correct results.

11   And people holding, again, the tire

12   manufacturers accountable for being right.

13   Because that will happen, I guarantee you we will

14   be held accountable for being correct.

15   And this analysis just gives you a

16   little glimpse -- I know it's complicated and I

17   apologize -- it gives you a little glimpse of the

18   uncertainty that engineers have to deal with to

19   give you the correct answer and be accountable for

20   it.

21   We just went to another lab pair so you

22   knew we didn't just cherrypick the best lab here.

23   But, anyhow, here's --

24   DR. WADDELL: I have a question on the

25   last slide before we --

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1              MR. GUINEY:  Sure.  No, I'm sorry, I'm

2       sorry.

3              DR. WADDELL:  -- proceed.  Walter

4       Waddell, Exxon Mobil.  What it looks to me,

5       forgetting all of these statistics, because I do

6       that on my computer, is we've drawn up a bin shown

7       here in pink for the worst tire out of the eight,

8       comparing only two labs for three tires.  And that

9       really was Alan Meier's question, is you need more

10      data, more tire brands or more labs to narrow the

11      window.  Not more repeats of the process.

12             MR. GUINEY:  No.  If that was the

13      impression, this is the composite of all eight of

14      working, not just one.

15             DR. WADDELL:  I understand that.  But

16      what I'm looking at here is you got the worst

17      tire; you doubled its error limits, call that a

18      band.  And you've doubled the error limits based

19      only on two labs for one tire.

20             MR. GUINEY:  No.  These calculations are

21      based on --

22             DR. WADDELL:  I understand all the

23      calculation --

24             MR. GUINEY:  -- all eight tires --

25             DR. WADDELL:  -- arguments, okay.  But
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1   that band width is 1.5.

2   MR. GUINEY: Yeah.

3   DR. WADDELL: Nowhere in the

4   calculations does it say that. So Alan Meier says

5   you got to narrow that 1.39 by more testing. And

6   you talked about testing the worst tire. We're

7   saying you need to have more labs test the same

8   tires, and more labs test more different tires to

9   find out what the real variability is.

10   MR. GUINEY: Yeah, you --

11   DR. WADDELL: Because you've already

12   addressed the machine. And this now introduces

13   the tire variability.

14   MR. GUINEY: Yeah, the cost associated

15   with any testing schemes to reduce uncertainty can

16   be dealt with at a future meeting. This is just

17   an example of what was done to decide what is the

18   best way forward in aligning labs, and to meet the

19   purposes of a good alignment procedure.

20   DR. WADDELL: Right, but I'm saying I

21   look at a picture whose band width is twice the

22   worst tire of merely two labs.

23   MR. GUINEY: Yeah, you'll have to

24   honestly dig into the statistics because that is,

25   in fact, when you look at all of these and you

1   look at how these formulas are derived, that is,

2   in fact, what is contained in all of this testing.

3   Now, so I understand your

4   interpretation, but in fact it's based on all this

5   data. It is not based on just the worst tire.

6   DR. WADDELL: But visually that's what I

7   see.

8   MR. GUINEY: I understand visually. I

9   mean I can't help what happens in actuality. I'm

10   just explaining how it's derived. Visually you

11   can come to that conclusion, but in fact it's

12   derived from all this data.

13   Now, go ahead. It's the same, I just

14   wanted to show you -- forget that -- that was lab

15   FL doing its alignment work. This is lab F-L --

16   go forward -- this is lab F-L doing the same

17   alignment work. Sorry the arrows aren't in the

18   right place. Came up with their equation; made

19   sure that their machines were where they needed to

20   be.

21   Go to the next one. Unaligned data

22   showing the raw unaligned lab disagreement. Next

23   slide. And the uncertainty was a little better

24   between the lab pair F and L. It was down to .51.

25   And the total uncertainty plus the risk of being

66

1   wrong, or this relative bin width is at 1.28.

2   That's the -- I just want to conclude,

3   since I'm taking a long time, I want to just give

4   you the basic conclusions. Next slide. You can

5   go past that, because we already --

6   So, C-sub-R is an appropriate

7   characteristic to analyze and categorize tire

8   rolling resistance information. ISO 28580

9   provides an effective methodology for aligning

10   labs based on C-sub-R. And the aligned results

11   are required to be reported.

12   But a very important point is some

13   amount of variation lab to lab, and within lab,

14   remains after alignment and creates uncertainty.

15   That residual misalignment lab to lab and within

16   lab creates this uncertainty number we have to

17   deal with.

18   All we're saying is the way we typically

19   deal with that in the tire industry is to apply

20   categorical ratings, not actual numerical

21   numbers. And we can discuss that further at a

22   future workshop, or whatever you propose.

23   And then the presentations following

24   will help demonstrate how categorical ratings can

25   effectively avoid some of the issues that have

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1 been raised in prior workshops about customer or

2 consumer confusion. And bring up an issue of how

3 we avoid some potentially inappropriate tire

4 selections that could occur if you do not use

5 categorical ratings.

6   So, we've had plenty of questions,

7 plenty of discussion. Sorry it took so long, but

8 that's the nature of the beast. Thank you.

9   MR. TUVELL: I just have sort of an

10 impromptu slide that I want to present that helps

11 illustrate my confusion on this subject, if you

12 don't mind.

13   (Pause.)

14   MR. TUVELL: I appreciate your patience

15 dealing with this. This sort of came up at the

16 last minute. We weren't necessarily expecting to

17 show this. So it wasn't we rehearsed this. For

18 some reason it's now showing correctly.

19   MR. GOTTLIEB: Dan, Dan, Adam Gottlieb

20 with the Energy Commission. You are using the

21 term "they" when referring to the ISO 28580. Can

22 you identify who they are, who is the amorphous

23 group that defines or that makes this

24 determination?

25   MR. GUINEY: I have to go back -- I'd

1   have to go back to the actual participant list.

2   But it was --

3   MR. GOTTLIEB: Is it a U.S. group, is it

4   a federal group, is it --

5   MR. GUINEY: No. It's a global tire

6   industry group.

7   MR. WISCHHUSEN: Tires, vehicle makers,

8   testing. I mean it's not limited to the tire

9   industry.

10   MR. GUINEY: No, yeah, it's not. It's

11   the global -- in the case of 28580 it's the global

12   community interested in that.

13   MR. MEIER: May I ask some questions

14   while they're getting this fixed up? This is Alan

15   Meier.

16   So, first of all, we were having a side

17   discussion there. For the moment assuming that

18   there were bins, are you suggesting that the bin

19   size should be the same through the statistics?

20   MR. GUINEY: Later on we will share some

21   information in another presentation that kind of

22   shows our concept of how that could help the

23   consumer make a choice.

24   So that, say, for example, I wanted to

25   choose tire A versus tire B. Tire A being in a

 1   better energy category than tire B. And maybe a

 2   third or fourth category above that.

 3   We were looking at constant bin widths

 4   to help have relatively constant amount of fuel

 5   economy difference as you move between the

 6   different bin widths.

 7   Because the customer is interest, I

 8   guess, in my opinion, in miles per gallon on got

 9   on my car after I bought your tires. So we were

10   thinking that if we used the constant bin width

11   it's going to be more simple to present to him

12   what fuel economy benefit is he going to gain by

13   picking tires in different bins.

14   And it would be relatively constant

15   between the different bins.

16   MR. MEIER: Thanks. This is a slightly

17   unrelated question, but maybe you know the answer.

18   When the automobile manufacturers request rolling

19   resistance data from the tire manufacturers, how

20   many tires do they request being tested?

21   MR. GUINEY: I'm not the best one to

22   ask. I know in our case it varies depending on

23   the maker. I think the minimum I've ever seen is

24   three per test group. But it does go higher.

25   Anybody else? Tim.

```
 1              MR. ROBINSON:  Yeah, typically it's

 2      three; it can be higher -- always usually

 3      basically --

 4              MR. TUVELL:  Can you come to the mic?

 5              MR. ROBINSON:  Sure.  Yeah, Tim Robinson

 6      from Bridgestone.  Typically it's three at a

 7      minimum.  Sometimes it can be more depending upon

 8      the repeatability, variability of your testing.

 9      But in every case their targets are typically set

10      based upon rolling resistance coefficient as

11      opposed to rolling resistance force.  We'll get

12      into that a little bit later.

13              MR. MEIER:  But no manufacturers require

14      more than three?

15              MR. ROBINSON:  I'm sorry?

16              MR. MEIER:  All manufacturers are just

17      about three?  There's none that are greater than

18      three that you're aware of?

19              MR. ROBINSON:  There could be some that

20      are greater than three.  Basically though it's

21      typically three.

22              MR. MEIER:  Okay.  Thank you.

23              MR. TUVELL:  Mike, I grabbed this off

24      the internet.  It's a Michelin presentation.  You

25      see the date there.  I don't know exactly where --
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1   the context of it. And so bear with me here. I

2   want to go towards a slide at the end.

3   Having a slow time catching up, hold on.

4   (Pause.)

5   MR. TUVELL: It appears that we're not

6   going to be able to get this to come up. We'll

7   work on it during lunchtime so I can show you --

8   find a way to get it up so I can illustrate the

9   point. I appreciate everyone's patience.

10   MS. NORBERG: While we're getting the

11   presentation up, just as a time check I know we're

12   at 11:35 a.m. We were way too -- to discuss an

13   important subject. But I just wanted to check

14   with everyone in the audience, given that we're

15   getting near the noon hour, do we want to -- I

16   mean is it all right if we -- if this goes an hour

17   or 45 minutes, are we good without taking the

18   lunch break now? Is everybody comfortable with

19   that?

20   Yeah. No one looks like they're dying.

21   Okay. I just wanted to check, thank you.

22   (Pause.)

23   DR. HAWLEY: Thank you for getting the

24   PowerPoint up. I'm Mark Hawley; I'm with ENVIRON

25   Corporation, working on behalf of the Rubber

1   Manufacturers Association. And I did some

2   analysis of data, compilation of data, and then

3   analysis of data, data produced and available from

4   a variety of sources. And that's what I'm going

5   to talk about here.

6   Next slide, please.

7   MR. SPEAKER: Sorry, Mark, could you get

8   closer to the microphone?

9   DR. HAWLEY: Certainly. Is this better?

10   MR. SPEAKER: That's better, yes.

11   DR. HAWLEY: My second slide simply lays

12   out the contents of the presentation, that is I'll

13   talk about the objectives, describe the datasets,

14   market coverage, distribution of the RRC values,

15   sources of variation and then some points of

16   discussion.

17   Next slide, please. These are the

18   objectives of the work that ENVIRON did on the RRC

19   values. First objective was to compile a

20   comprehensive dataset. There have been a number

21   of sources that have distributed or made available

22   RRC values. We want to bring these all together

23   and see if the collected or combined dataset

24   provided us with information that was useful.

25   Second, following up on a suggestion by

1   the Transportation Research Board, we thought we

2   should look at, make sure that we had evaluated

3   the degree of market coverage available in the

4   existing RRC datasets.

5   The TRP publication had noted that it

6   was important to think about relative sales for

7   individual tires when you were evaluating the

8   variability in RRC data, in terms of how the

9   market, as a whole, would be represented by those

10   data.

11   The third point, or the third objective

12   was to characterize the distribution of RRC values

13   in the domestic replacement tire market. Of

14   course, this is the state of California workshop,

15   but we did not focus exclusively on the California

16   market.

17   And then the fourth objective was to

18   evaluate sources of variation and uncertainty

19   associated with the RRC values that were in the

20   combined dataset.

21   Next slide, please. The first of the

22   available datasets I've listed here is the one

23   produced for the California Energy Commission,

24   which, of course, involved five replicates

25   produced by the same laboratory, and I understand

 1   on the same machine, for each of 149 passenger car

 2   tires.

 3   The CEC data report provided numbers in

 4   terms of rolling resistance force. So we

 5   calculated the RRC values from those rolling

 6   resistance values. Other tire characteristics

 7   were also reported.

 8   The data that we obtained from the

 9   literature included two datasets produced by the

10   Transportation Research Board, or provided by the

11   Transportation Research Board. This is the 2005

12   report, SR286.

13   And the data that were the basis for

14   that report include dataset of 34 observations,

15   after we've eliminated the ones that aren't

16   relevant to the specific passenger car tire

17   limitation here. Thirty four reported by ECOS in

18   2002 and 162 RRC values reported by RMA numbers

19   who submitted those data to the TRB back in 2005.

20   And then we, since we're working for the

21   Rubber Manufacturers Association, we requested

22   additional data from the RMA members. And we were

23   provided with additional sets of data by some of

24   the member manufacturers totaling another 662

25   passenger car tires.

1   Combining these three datasets gives us

2   a gross count of 1007 RRC test values with varying

3   numbers of replicates represented by each of those

4   test values. And varying levels and kinds of

5   additional information on each of the tested

6   tires.

7   Next slide, please. The variables we

8   looked at in conducting this analysis included a

9   group of variables used to identify the tires,

10   such as the manufacturer, brand, model and so on.

11   Two of the characteristics in this first

12   bullet, load index and speed rating, are really

13   measures of, or indices of the service for which

14   the tire is designed, a service description.

15   And then we also included in the tire

16   identification category the size, which is defined

17   by three dimensions, the rim diameter, the section

18   width, and the aspect ratio. And also a prefix.

19   Since we're focused on passenger car tires, the

20   prefix really comes down to P metric versus Euro

21   metric. Light truck tires have been excluded from

22   the dataset.

23   The variable that we're focused on,

24   understanding the variation in the distribution of

25   this, the rolling resistance, we used rolling

1   resistance coefficient and, of course, for the CEC

2   dataset we computed that from the rolling

3   resistance force.

4   And then the other tire characteristics

5   for which we had data for some, but not all, of

6   the tires, included the UTQG ratings, traction,

7   temperature and tread wear, the tire weight, the

8   tread depth and the outside diameter.

9   And we were interested not just in

10   looking at the RRC values, themselves, but also to

11   see how those other variables related to RRC.

12   Next slide, please. To combine the

13   datasets we first looked at them critically to see

14   whether or not there were observations that should

15   be excluded, or, in fact, if there were errors

16   that should be corrected. With the TRB dataset

17   there were a few minor errors that we had to

18   correct.

19   And they and some of the other data

20   sources reported speed rating not as an individual

21   value, such as S or T or V, but as a group. For

22   example, S,T or H,V. They had defined speed

23   rating groups that in some cases were the same

24   from one dataset to another, and in others

25   different between the datasets.

1   So we went and did our best to assign

2   individual speed ratings to each of the tires in

3   the TRB datasets. And load index values, as well.

4   The CEC dataset provided the actual

5   speed rating and the load index and most of the

6   other variables of interest to us. We did take

7   the average of the five replicates, and the

8   rolling resistance force, and then convert that

9   average to a single RRC value for each of the 149

10   tires that were tested.

11   The additional datasets we received from

12   the RMA members varied in terms of the number of

13   replicates per tire. So we would look at RRC

14   value for one manufacturer and see that that was

15   an average of three replicates. And in others it

16   was based on a single test.

17   Where it was possible for us to

18   determine not just in the recent RMA member

19   datasets, but in the others, we made sure that we

20   knew how many replicates were represented by each

21   of these RRC values.

22   We weeded out tires that were

23   represented in the dataset, but which, I think,

24   are not considered in the proposed regulation by

25   excluding all LT, light truck, tires. And winter/

1   traction tread tires.

2   We included RRC values and data for

3   original equipment tires, because almost all

4   original equipment tires are also available as

5   replacement tires.

6   As I said, the current count is 1007 RRC

7   values with identifying information. But the

8   extent of the additional information on variables,

9   especially such as tire weight, outside diameter,

10   tread depth, is variable from one RRC test value

11   to another.

12   Our second objective was to see how well

13   this dataset characterized or represented the

14   replacement tire market. We had to try to

15   evaluate this without having any sales data that

16   were specific to individual tires.

17   And RMA members provided us -- RMA

18   actually provided this compiled dataset that

19   showed tire shipments, domestic tire shipments for

20   the calendar year 2006. And we used this as the

21   basis for estimating domestic sales.

22   Again, second bullet. The sales data

23   are not available for specific tire brands,

24   models, stock keeping units, or states. We don't

25   have data for California only.

1   We used the RMA tire shipment data to

2   estimate the percentage of the 2006 domestic

3   passenger car replacement tire market accounted

4   for by specific combinations of tire size and

5   speed rating.

6   And these percentage estimates are based

7   on shipments by RMA members which represent

8   approximately 90 percent of the domestic

9   replacement tire market. So we had some

10   confidence that the numbers were reasonably good.

11   Next slide, please. In terms of market

12   coverage what we find is that the combined 1007

13   observation RRC dataset includes tests on

14   approximately 150 different sizes of tires with

15   various speed ratings.

16   Many of those sizes, probably most of

17   those sizes are produced in only one or two speed

18   rating codes. There are many combinations of size

19   and speed rating that are manufactured and sold.

20   Speed ratings, as related to tire

21   construction characteristics, can influence the

22   rolling resistance coefficient. And the tire

23   characteristics that relate to the speed rating

24   suggest four speed rating groups can be

25   established. Those being H, -- and speed ratings,

80

1   the higher speeds are farther along in the

2   alphabet generally with the exception of H, just

3   to keep everything from being too transparent.

4   H, V which is faster than H, ZR which

5   includes W, Y and Z rated tires. And then all

6   others. That is the lower speed tires which have

7   letter designations up to T. And in some cases

8   not all the tires have speed ratings on them.

9   Size and speed rating are often related,

10   that is higher speed ratings are typically found

11   in sizes with larger rim diameters and lower

12   aspect ratios.

13   And collectively in our combined RRC

14   dataset we have test data, RRC test data for more

15   than 200 combinations of tire size and wannabe

16   sport SR groups that are sold in the domestic

17   replacement tire market.

18   Take all together, the tire sizes

19   represented in the combined RRC test dataset

20   account for more than 92 percent of the 2006

21   domestic replacement tire market as gauged by the

22   tire shipments by the RMA members.

23   The 200, more than 200, actually,

24   combinations of size and SR group represented in

25   the dataset account for almost 88 percent of the

 1   market. So, the first bullet there is considering

 2   size alone. We've accounted for more than 92

 3   percent. If we look at the combination of size

 4   and speed rating, we've covered about 88 percent

 5   of the market.

 6   What's critical, though, is that none of

 7   the untested combinations, none of the

 8   combinations of size and speed rating group for

 9   which we don't have RRC data in the combined

10   dataset account for as much as half of a percent

11   of the market.

12   So, the portion of the market that's not

13   accounted for by these 200-plus combinations is

14   distributed over a very wide and very large number

15   of combinations that haven't yet been tested size

16   and SR group.

17   We also looked to see whether the

18   distribution of RRC test values we had across

19   these 200 combinations, many of which had more

20   than were represented by more than one of RRC test

21   value, was the distribution of RRC values in the

22   combined datasets, similar to the proportions of

23   sales represented by those combinations. In some

24   cases it was, and in some cases it wasn't. It

25   certainly wasn't a well balanced dataset.

1   In terms of characterizing the

2   distribution of RRC values in the replacement tire

3   market, which is the third objective, we took two

4   approaches. One was simply to use the available

5   RRC test data values. And the second was to

6   combine, or to use the tire shipment and sales

7   data to assign weight to those RRC test data

8   values.

9   And it's actually -- like we're using

10   those two methods to address somewhat different

11   objectives. If you think about characterizing the

12   market, the replacement tire market, though, the

13   sales-weighted figures are the ones that would be

14   closer to, I think, what you're interested in

15   evaluating.

16   Each of these two approaches allows us

17   to develop a curve that represents the

18   distribution of RRC values in the market. And as

19   shown on the next figure, the curves are nearly

20   identical.

21   The red curve here is simply

22   representing the unweighted RRC dataset of all the

23   values combined, 1007 values. At the blue curve,

24   which is very similar, is after the sales

25   weighting has been applied to those numbers.

1   Next slide, please. The fourth

2   objective was to evaluate, to examine, identify

3   and evaluate sources of variation in RRC values.

4   And I like to think of this in terms of starting

5   with an individual single measurement and working

6   up from there.

7   Dan's presentation talked about efforts

8   to measure and control the repeatability of

9   measurements by specific laboratory working on the

10   same machine with the same tire. Once we get into

11   a question of the replacement tire market, there

12   are a lot more sources of variation that come into

13   this.

14   Focusing initially on sources of

15   variation within a specific stock-keeping tire,

16   the two primary sources are item-to-item

17   variability. Because the tires are manufactured

18   items, they aren't all exactly the same. So

19   there's some variability between replicates.

20   And then second, variability due to

21   differences between test machines. And, of

22   course, the ISO standard is developed and will be

23   implemented to try to address that second source

24   of variability.

25   The variability for both of these

1   sources should be considered in evaluating the

2   uncertainty associated with an RRC value reported

3   for an individual tire.

4   Differences in RRC values between SKUs

5   are separate from these two categories or sources

6   of variation I mentioned previously. We also

7   looked in the dataset and found that the

8   differences in RRC values between various SKUs

9   don't appear to be very strongly related to other

10   variables in the combined dataset, such as the

11   size, UTQG ratings and so on and so forth, there's

12   other variables listed here, are not very good at

13   -- they don't provide you with a high degree of

14   precision in predicting what the RRC value of a

15   specific SKU will be.

16   In terms of the variability with an SKU,

17   the CEC dataset provides us something that we

18   didn't previously have, and that is a dataset that

19   can be used to look at the item-to-item

20   variability. We have five replicates tested in

21   the same laboratory on the same machine for each

22   of 149 different SKUs, or types of tire.

23   And what I've shown here is a plot that

24   shows on the horizontal axis simply the average

25   rolling resistance coefficient calculated for each

1   of those 149 tire lines.

2   At the black bars, the vertical bars

3   around that line are simply the confidence

4   intervals established for each of those RRC

5   values. And what's interesting about this is that

6   the width of the confidence interval appears to be

7   unrelated to the RRC value. That is you don't see

8   the confidence intervals getting larger as you go

9   up or down on the horizontal axis.

10   Next slide, please. The 95 percent

11   confidence intervals that are shown on the

12   preceding figure were simply computed from five

13   replicates from the same laboratory for each of

14   the tested tires.

15   The half widths of the confidence

16   interval is a function of the sample size, in this

17   case 5. And the test-to-test variation, or what I

18   had previously referred to as the item-to-item

19   variation, but it really also includes the

20   repeatability that Dan was talking about in his

21   presentation about the ISO standards. So it's

22   probably better to refer to it as the test-to-test

23   variation.

24   The half widths computed from five

25   replicates for these 149 tire lines range from .03

1   to 1.3. And the average half width is .26. So

2   there is quite a range of variability or levels of

3   variability from one tire to another evident in

4   this dataset.

5   This item-to-item variability, I think,

6   causes substantial uncertainty, at least in some

7   RRC values. Some of them are obviously measured

8   very accurately, or can be estimated very

9   accurately, in that the error bar is plus or minus

10   .03. Whereas others are not so accurately

11   measured, as in the example here, 10 plus or minus

12   1.3.

13   The level of variation among the five

14   replicates then is obviously varying substantially

15   from one tire, or SKU, to another. And that level

16   of variability does not appear to be strongly

17   related to any of the other tire characteristics.

18   It certainly doesn't appear to be strongly related

19   to the average RRC, but it's also not strongly

20   related or well explained by size or speed rating

21   or any of the other variables that we have here.

22   In pair-wise comparisons between the

23   tires for which we have the five replicates, many

24   of the mean RRC values estimated from the CEC

25   dataset would not be significantly different. I

1   think that's visible probably better by inspection

2   of the preceding slide with the graph -- could you

3   go back to that -- where you see large overlaps in

4   the error bars for two tires.

5   The likelihood that you would conclude

6   in a statistical sense that these are

7   significantly different in terms of their average

8   RRC is very small. You'd be looking for pairs of

9   tires where the error bars do not overlap before

10   you would expect to have a statistically valid

11   conclusion that, yes, this RRC is higher or lower

12   than the RRC of this other tire.

13   So then just to follow up on these

14   points. We put together a dataset by combining

15   data from various sources that has a lot of RRC

16   observations, over 1000 observations, in them.

17   But it includes sources of variation that we don't

18   expect to have to deal with once everybody starts

19   using the new ISO method. Particularly inter-lab

20   variability which we expect will be largely

21   compensated for and quantified.

22   I was not in a position to be able to

23   quantify any of the inter-lab variability with the

24   dataset that I put together by combining these

25   things. I had no way of knowing whether there was

 1   a systematic difference between the values

 2   reported by ECOS and one of my manufacturers, or

 3   one of the other manufacturers, and so on and so

 4   forth.

 5   Although we thought about it, I don't

 6   think we'll find that there is a way to go back

 7   and correct retrospectively for that source of

 8   variation. So we have this combined dataset that

 9   has a source of variation that we don't expect to

10   have to deal with, at least to a great degree in a

11   nonquantitative fashion going forward. But I

12   don't think we'll be able to retrospectively go

13   back and remove or account for that variation in

14   the existing dataset.

15   MR. GUINEY: Yeah, I just wanted to make

16   one point. The chart with the CEC data would not

17   benefit from any of the alignment because that was

18   one machine tested at that particular laboratory.

19   So that's still real. Regardless of the

20   ISO alignment.

21   DR. HAWLEY: The second point for

22   discussion here concerns the market coverage.

23   Again, this is based on tire shipments by RMA

24   manufacturers, but the analysis suggests that the

25   RRC data that we combined in this larger dataset

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1   represents a very large proportion of the total

2   replacement tire market.

3   The third point with regard to the

4   distribution of RRC values focusing, I think, on

5   the sales-weighted, as a result of having what we

6   believe is good market coverage in the RRC

7   dataset, there was very little difference between

8   the sales-weighted and the unweighted

9   distributions.

10   And they are reasonably well behaved

11   statistical distributions. They are not highly

12   skewed; they're not bimodal; they're not

13   complicated by a number of things that you might

14   expect to see, or at least dread seeing when you

15   combine data from a variety of different sources

16   like this.

17   And then last, in the order of the

18   objectives that we worked towards is the sources

19   of variation, again. The CEC dataset provides

20   insight into the variability you can expect for

21   repeated testing in the same laboratory on

22   replicates, that is different tires, different

23   items from the same SKU, the same tire line.

24   And what we see there is that some tires

25   cluster very tightly. That is, have very little

1   tire-to-tire variability or test-to-test

2   variability in terms of the RRC value. And others

3   have substantially more.

4   And fortunately it's not my problem then

5   to decide how will you address that variability

6   from one tire to another in terms of regulating

7   the market.

8   But when I think of reporting RRC

9   values, one of the things you have to deal with is

10   well, how many significant digits, how many places

11   to the right of the decimal are you going to

12   report.

13   And I could envision coming to the

14   conclusion that a reasonable way to report these

15   is only to the left of the decimal place. We have

16   a tire that rates 7, 8, 9, 10. Some tires you can

17   report to a very much smaller interval than that.

18   But regardless of what number you put

19   out there, even if you had three places to the

20   right of the decimal place, you're still reporting

21   an interval. Only need to -- once you recognize

22   that you're reporting an interval, then the

23   question to be addressed is how wide should those

24   intervals be. And I think that's a question that

25   has to be answered by regulators.

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1   Any other questions, comments?

2   MR. TUVELL: Yes, let me -- Ray Tuvell

3   with the Energy Commission. Let me ask a question

4   specifically to your last point on how many places

5   on each side of the decimal point.

6   I'm generally familiar with all the

7   datasets that you reviewed, except I haven't seen

8   the RMA data. And obviously I understand that the

9   Energy Commission dataset, the TRB dataset and the

10   ECOS dataset.

11   If you think about it for a second, on

12   all those datasets how many places to the right

13   side of the decimal point were reported?

14   DR. HAWLEY: I think typically two.

15   MR. TUVELL: Typically two.

16   DR. HAWLEY: Um-hum.

17   MR. TUVELL: So that's my understanding,

18   also. That historically that's what the industry

19   has always reported. Do you know something

20   different than what I know in any of these

21   datasets?

22   DR. HAWLEY: I wouldn't be the best

23   person to answer that. In terms of the datasets

24   that I saw, I remember looking at the

25   Transportation Research Board publication, the SR-

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1   286 publication. And they did discuss earlier

2   datasets. But I don't recall what numbers --

3   excuse, significant digits for reporting those

4   datasets. We could probably go back and look at

5   that.

6   MR. TUVELL: So for the RMA datasets

7   that were given to you, how many points to the

8   side of the decimal point were they reported?

9   DR. HAWLEY: It varied from one

10   manufacturer to another.

11   MR. TUVELL: Okay. And what was the

12   variation?

13   DR. HAWLEY: I'd have to go back and

14   look because the first thing I did was mask it

15   down to two, because carrying numbers with six or

16   eight significant digits to the right of the

17   decimal point in my Excel spreadsheets was --

18   MR. TUVELL: Sure.

19   DR. HAWLEY: -- just an annoyance. It

20   wasn't helpful. So I can't tell you for sure.

21   MR. SPEAKER: It was at least two --

22   DR. HAWLEY: Yes, in each case I think

23   it was at least two.

24   MR. TUVELL: So at least two. I mean

25   that's what I wanted to confirm, also, if your

1   observation is the same as mine. Apparently

2   historical practices, for whatever reasons, it's

3   been two, two to the right of the decimal, to the

4   hundredths is what I see on almost all the data.

5   And I just wanted to make sure that if

6   anybody's seen something -- or did you see any

7   qualifications in any of that data that said,

8   we're going to report to the hundredths, but you

9   can't do this, or it's not accurate --

10   DR. HAWLEY: No, I haven't seen that.

11   MR. TUVELL: -- or anything like that?

12   DR. HAWLEY: I think most people, most

13   engineers, at least, -- I'm an engineer, I'm not a

14   statistician, either, although I'm providing

15   statistical advice here, and I do have a minor in

16   statistics. I am not a statistician by trade.

17   I'm an engineer, an environmental engineer.

18   I think that in engineering, at least,

19   the common assumption is that you carry through

20   significant digits until you reach the end of your

21   calculations. That is, you use the numbers as you

22   intend to use them, and then you decide where to

23   round off.

24   Now, if, as a statistician, I was

25   interested in comparing the mean values

1   represented by the average of five replicates for

2   two different specific tire lines I wouldn't round

3   off at all. I'd carry more than two significant,

4   or more than two digits to the right of the

5   decimal place through those calculations.

6   MR. TUVELL: Yes, I was just trying to

7   understand how you went from the fact that your

8   observation of the data showed all others at least

9   reported to the hundredths to coming up with the

10   recommendation that no, you never report anything

11   less than a whole number, which is what I thought

12   I heard you say.

13   DR. HAWLEY: If I suggested that I would

14   never report anything to less than a whole number

15   I'm sorry about that. That's not the impression I

16   meant to give.

17   The impression I meant to give is that

18   for some of the tires reported in the CEC dataset

19   the level of accuracy that's justified in

20   reporting that RRC value, that the average of 5 is

21   probably only good to the decimal point.

22   When you have 10 plus or minus 1.3 as a

23   confidence interval for the mean value, you can be

24   almost 95 percent certain that the actual mean

25   value for that tire is between 9 and 11. But you

 1   certainly can't be highly confident that it's

 2   between 9.9 and 10.1.

 3   MR. TUVELL: I understand, but you're 10

 4   to the plus or minus 1.3 I believe is the extreme

 5   example of some of the worst tire variations we

 6   saw. And, in fact, the vast majority -- and I

 7   have the data here, we can roll it up if you'd

 8   like to go over it -- shows that the very narrow

 9   bands in the vast majority of cases --

10   DR. HAWLEY: Some of them are very

11   narrow, yes.

12   MR. TUVELL: Right. And that where you

13   saw these high degree of variations there were

14   indicators of other potential reasons why. Like

15   in some cases we saw high variations in that tire,

16   one of five. And you take a look and all of a

17   sudden you say, why does this tire weigh a pound

18   and a half more than the rest of them.

19   Or you look at the DOT serial code on it

20   and you find that, gee, this one tire was made at

21   a substantially different date, different plant

22   location than the other four tires.

23   And there starts becoming some meaning

24   to what's going on here. But there's ways to

25   question or explain what's going on to the data

1   that not just simply say let's aggregate it all

2   and say, oh, gee, it's plus or minus 1.3 RRC

3   variation across all of them. That's --

4   DR. HAWLEY: Well, I didn't mean to

5   imply, if I did, that it was plus or minus 1.3 for

6   all of them.

7   MR. TUVELL: Okay. But that was the

8   only numerical conclusion I saw in your slides is

9   my problem.

10   DR. HAWLEY: I think that that is shown

11   as an example.

12   MR. TUVELL: Extreme example.

13   DR. HAWLEY: It's an extreme example,

14   because the extremes are what's important here, I

15   think. That is, I also have the .03 in that same

16   slide. That's the minimum, that's the smallest

17   half width that was observed.

18   And I report them both on that slide. I

19   think the 1.3 is the example I showed because I

20   thought the tire with the highest half width was

21   the one that was most important of knowing what's

22   the limit, the upper limit of variability that's

23   observed in this dataset.

24   MR. TUVELL: But, I guess --

25   DR. HAWLEY: The lower limit, I think,

1   we've already talked about in terms of Dan's ISO

2   presentation. And I did point it out when I went

3   through the slides.

4   MR. TUVELL: But I guess my point is you

5   didn't take the next step of saying here's this

6   one highest tire with the 1.3 variability. I

7   wonder why. And start looking at the other data

8   to try to investigate that and try to determine

9   the reason why.

10   DR. HAWLEY: I looked at two things in

11 that regard. First, I looked at the serial

12 numbers. And my recollection, and it's been a

13 little while since I did this, but my recollection

14 is that the majority of the 149 tested tires had

15 serial numbers that were very close to each other.

16 It was not two or three or four much different

17 serial numbers within a set of five for most of

18 those.

19   When I looked at the combinations where

20 there was the greatest variation among the five

21 serial numbers, one of those had a relatively high

22 variability, as represented by the half width.

23 And I don't remember which one it was. It wasn't

24 the 1.3. And the other two had relatively low

25 variabilities, as measured by the half width. I

1   have that in my notes; I didn't put it in my

2   presentation.

3   The next thing I looked at was to see

4   whether or not there was an apparent relationship

5   between the level of variability among the five

6   replicates and any of the other tire

7   characteristics for which I had information. The

8   average RRC, of course, as shown on the slide.

9   But also the tire weight, the outside diameter,

10   the tread depth and all these other variables.

11   I had averaged those as I averaged the

12   rolling resistance force before I converted to

13   rolling resistance coefficient for each set of

14   five.

15   So I didn't go back and look in the RRC

16   dataset where all of the characteristics,

17   individual characteristics for each of the five

18   replicates were shown. Except for the serial

19   numbers. The serial numbers are the only one of

20   those variables that I looked at separately.

21   MR. TUVELL: I appreciate the answer.

22   And I welcome the opportunity, by the way, to sit

23   down with you and go over the data and share with

24   you the observations I've had on the same data,

25   and the reasons why you would be highly suspect

1   about some of these tires. Maybe it's a quality

2   control issue associated with the manufacturer.

3   DR. HAWLEY: Okay. Well, I'll be happy

4   to do that.

5   MR. MEIER: Alan Meier. I was outside

6   for a moment, so you may have already heard this

7   question. Was there -- I wasn't clear which data

8   were new that haven't been publicly presented

9   before?

10   There were several datasets, one you

11   called the TRB, which I think that one is -- known

12   as the National Academy's?

13   DR. HAWLEY: Yes.

14   MR. MEIER: -- the National Academy?

15   DR. HAWLEY: Yes.

16   MR. MEIER: Okay.

17   DR. HAWLEY: It's the same, essentially

18   two datasets within there. The TRB is the way I

19   refer to it because I think it's their website

20   where you can find the data and download it now.

21   MR. MEIER: All right.

22   DR. HAWLEY: And it's actually two

23   datasets. One includes, in terms of passenger car

24   tires, excluding light truck tires and winter

25   tires and so on, I think it includes 162

1   observations, RRC values, reported by RMA member

2   companies to the NAS when they were doing the

3   analysis back five years ago, four years ago.

4   And the other dataset, also distributed

5   by TRB, and included in their analysis is the ECOS

6   dataset, which I think started with 43

7   observations. And once you exclude the light

8   trucks and so on, comes down to 34.

9   MR. MEIER: So, I guess my original

10   question was is there any data that we haven't

11   seen here before that hasn't been publicly

12   available, in your analysis?

13   DR. HAWLEY: Yes. In addition to the

14   ECOS dataset, the RMA dataset that was submitted

15   to the TRB. And that was available from TRB. And

16   the CEC data. We also have an additional set of

17   measurements that I received from various RMA

18   members. And that, as far as I know, has not been

19   distributed publicly yet.

20   MR. MEIER: Would it be possible to get

21   some separate displays of that data like you did

22   for the CEC, because I think that would be useful

23   to show.

24   DR. HAWLEY: Not right now.

25   MR. MEIER: Okay.

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 1                    DR. HAWLEY:  I don't have anything
 2      prepared that would show those observations --
 3                    MR. MEIER:  All right.
 4                    DR. HAWLEY:  -- separately.
 5                    MR. MEIER:  And I was just curious, the
 6      data cover now, I guess, five years, span five
 7      years?
 8                    DR. HAWLEY:  Maybe more, yes.
 9                    MR. MEIER:  Maybe more.
10                    DR. HAWLEY:  Um-hum.  I'm not sure when
11      ECOS actually did their analyses.  They first
12      released the data, I think, in 2002.  And I
13      received some of the RMA data from the members,
14      that hasn't yet been distributed, within the last
15      12 months.
16                    MR. MEIER:  Um-hum.  So if there's been
17      any improvement over time, it may --
18                    DR. HAWLEY:  We have to make some
19      choices, yeah.
20                    MR. MEIER:  -- it may actually -- it
21      might -- you have such a large sample you might
22      actually be able to capture some of that, if
23      that's the --
24                    DR. HAWLEY:  That's true.  The TRB
25      publication in 2005 concluded, based on their
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1   comparison of the earlier datasets they had from

2   the '90s, and the data they received from the

3   manufacturers and the ECOS data, that there had

4   been improvements, reductions in rolling

5   resistance coefficient over time.

6   MR. MEIER: Yes, I recall.

7   DR. HAWLEY: And that does call into

8   question whether the earliest of the data included

9   in our combined dataset, the ECOS data, should, in

10   fact, be included in the combined dataset or not.

11   MR. MEIER: Thank you.

12   (Pause.)

13   MR. TUVELL: Tracey and I are nodding at

14   each other, so I think this would be a good time

15   for our lunch break.

16   So, it's roughly 12:20. I'm thinking

17   1:30, no later than 1:30, please. And we all can

18   reconvene and start our meeting again promptly at

19   1:30.

20   Thank you very much.

21   (Whereupon, at 12:20 p.m., the staff

22   workshop was adjourned, to reconvene at

23   1:30 p.m., this same day.)

24   --o0o--

25

1   AFTERNOON SESSION

2   1:32 p.m.

3   MR. TUVELL: I'm sure that everybody

4   would agree, based on the time it took us to get

5   through the morning's matters, that we're going to

6   need every minute we can get this afternoon to

7   finish our pretty ambitious agenda.

8   What I would like to do, if you don't

9   mind, is make a slight diversion from the agenda

10   to present a couple slides from this morning that

11   I tried to present and we had technical problems

12   associated with it.

13   So I'm going to move over to the other

14   mic to do that, please.

15   (Pause.)

16   MR. TUVELL: And, again, this is Ray

17   Tuvell with the California Energy Commission. I

18   wanted to show this slide. It's from a

19   presentation I received over the internet. And

20   it's a Michelin presentation from roughly 2006.

21   And my purpose in showing this is to go

22   directly to the issue of inter-lab variability

23   problem. And to understand it properly, and I

24   think Dan did an excellent job, we need to be

25   concerned if there's multiple labs doing testing,

```
 1        can we compare the results of one lab to another

 2        to another to another.  Okay.  Because there is an

 3        error built-in variability there that we need to

 4        deal with.

 5             And the folks associated with ISO 28580,

 6        I think, did an excellent job of identifying that

 7        potential problem, deciding to take it on.  Okay.

 8        And so I tried to go back to find out some sources

 9        of information to get a sense of, you know, what

10        did they identify and what sort of goals were they

11        after.

12             And this is where I found this

13        associated with this Michelin presentation.  And

14        so it kind of speaks for itself.

15             Basically they recognize that there are

16        lab-to-lab variability, and in this Michelin

17        presentation, and I'm not going to say it's an

18        individual person representing this.  It is what

19        you see it is there.  And that's all I'm

20        representing.  I can't take it back to any source

21        other than what you have here.

22             Point number two.  An inter-lab

23        alignment procedure was performed between five

24        manufacturers and they obtained an accuracy of

25        plus or minus 2 percent.
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1   And then point number three. They

2   handed it off to ISO as part of the 28580 process.

3   And it is my belief that that was what

4   was used to direct the effort in the ISO 28580

5   standards to come up with the lab-to-lab alignment

6   procedure.

7   And so you can say I took the leap of

8   saying, gee, I think they were shooting for a plus

9   or minus 2 percent accuracy in lab-to-lab

10   alignment in ISO 28580.

11   And so I wanted to share with the rest

12   of you where my perspective was coming from this

13   morning in my questioning of Dan. Okay.

14   And let's see here --

15   MR. WISCHHUSEN: No, leave it up,

16   please.

17   MR. TUVELL: Sure, yeah.

18   MR. WISCHHUSEN: Again, Mike Wischhusen,

19   Michelin. The historical context here, the inter-

20   lab alignment procedure did start within ETRTO,

21   which is the European Tire and Rim Technical

22   Organization.

23   What you're looking at there was a

24   closed system of five labs with eight control

25   tires.

1   What has come out of ISO is an open-

2   ended system with an infinite number of labs and

3   two control tires.

4   So there's more control tires will give

5   you what their labeling accuracy, I'm not sure

6   accuracy is precisely the right term to be using

7   there. But that's the difference that you're

8   seeing.

9   MR. TUVELL: Thank you, Mike. And then

10   one other slide I wanted to show real quickly --

11   hold on here a second, I'm operating two

12   computers.

13   In this morning's presentation there was

14   a lot of discussion about the Energy Commission

15   datasets. And you saw some condensation of that.

16   And that's also what I have done here, bear with

17   me. This is pretty gross stuff because it's got

18   some of my analysis on it, too.

19   But the point that I wanted to get to is

20   very straightforward. So here in the Energy

21   Commission testing we did tests of a sample of

22   five identical tires. So five Bridgestone, for

23   example, insignia SE200s, and five Michelin

24   MXV4+s. And why did we do that?

25   Because we wanted to understand and

1   identify that, in fact, we do expect to see some

2   variability in rolling resistance in what is

3   supposed to be otherwise identical tires. Right.

4   One would think, a consumer would think,

5   wrongly, we all understand, that if they buy five

6   insignia SE200s why would they expect to see

7   rolling resistance to be the same.

8   And we know that's an unrealistic

9   expectation. This is a manufactured product and

10   there's going to be some level of variability.

11   And so we would try to identify the extent of that

12   variability.

13   And so in the presentation that Mark

14   made this morning, he gave you a condensation of

15   this. But I wanted to show you really what some

16   of this data shows.

17   So, for example, here you will see

18   across this group of five a really tight, I

19   consider this to be a very tight grouping. In

20   other words, the range of high to low is only .2.

21   This is a tight grouping, which tells me high

22   quality control of a product.

23   Now, what else does it tell me? And,

24   again, this is what it tells me. Am I right or

25   wrong? I don't know. It's an OE product.

1   And my sense, in general, is that when

2   tire manufacturers produce products for the OE

3   marketplace, it's a very demanding marketplace.

4   And they expect tight tolerances on their

5   products, and they're getting it. And this is a

6   good example of that. Okay.

7   Now, let me just quickly show you an

8   example of tires that aren't as tight. Hold on

9   here while the screen catches up with what I just

10   did.

11   Okay, here's an example. I just pulled

12   this one out of the blue, so it's a General, which

13   is a Continental product. Okay. And over here,

14   again, five samples. And you see the rolling

15   resistance variation. And wait a second. What

16   happened here? A 9.1 out of this group of five

17   all of a sudden tells you something.

18   Now, I'm not exactly sure what this one

19   is telling me, frankly, because I'd like to look

20   at the weight of the tire to see if I see a major

21   difference. I don't.

22   This one I look over at tread wear depth

23   and I'm going, wait a second, it's tread wear's

24   the same as -- or its tread depth is the same as

25   this one. This tread depth is a lot higher. Why

1   didn't I see a higher rolling resistance here. I

2   didn't see it. I can't make sense of it.

3   But I understand it to be something that

4   will automatically draw my attention when somebody

5   gives me this dataset. Something's up here.

6   And the something up for me is going to

7   be it's the product. It's the tire. It is not

8   the test procedure.

9   Because we told our testers that you

10   start running into problems like this, you rerun

11   these tests and you assure me this data is good.

12   I have confidence in the data. The variability

13   I'm seeing here is in the product. Okay.

14   And let me give you a couple more

15   examples just real quickly here so you'll know

16   what we came across. Here's a good example.

17   Okay, this one here, Goodyear. And

18   again, I'm looking at this rolling resistance. I

19   see this outlier. A 9.73. And you can see

20   substantially different than the other four. And

21   I look over here and go, uh-oh, wait a second

22   here. Why is the weight of this tire almost a

23   pound heavier than the rest. Could this possibly

24   explain what's going on here, okay.

25   And so my point here is simply to

1   mention I don't want to draw a conclusion and say

2   I'm right on this, I nailed it, here's the reason

3   why.

4   What I'm saying is when we get this data

5   we don't just randomly just throw it up and say,

6   gee, well, it varies all over. No, there's

7   reasons behind this. Okay.

8   And we suspect that if a manufacturer

9   kept a closer eye on some of these products they

10   would see it, too.

11   And so the potential of having high

12   degrees of variation in product, I think is

13   something that can be controlled by the

14   manufacturer, if there was a need for them to give

15   it that level of attention.

16   MR. WISCHHUSEN: Can I ask a question?

17   MR. TUVELL: Yes.

18   MR. WISCHHUSEN: Is that last example

19   you gave us OE or replacement?

20   MR. TUVELL: This one happens to be OE.

21   MR. WISCHHUSEN: Okay, thank you.

22   MR. TUVELL: Yeah. And so let me tell

23   you the other story I will tell you, that, yeah,

24   I've learned so many stories as I've tried to pick

25   up on this subject.

1   First of all, and I think Dan mentioned

2   this, or somebody mentioned the presentation this

3   morning, oh, you can, in fact, get OE tires in the

4   replacement marketplace, yes, you can.

5   Now, it's very difficult for most people

6   to be able to identify what they are. Okay. So

7   if you go out and look at a tire how would you

8   know that's an OE. I couldn't do it, but I have

9   experts who can.

10   Unfortunately, we've been told that

11   oftentimes the reason why OE tires end up in the

12   replacement marketplace is because they've been

13   rejected by the OE. So, do I know that to be the

14   truth? No, I don't know that to be the truth.

15   But when I have found OE tire data it

16   seems to be here regular that thought goes through

17   my mind. That's, hmm, I'm wondering if that's a

18   partial explanation here. That somehow that got

19   rejected by the OE, ended up in the marketplace;

20   we happened to purchase it. Don't know. Don't

21   know.

22   So, I just wanted to take a couple

23   minutes to share with you some of the specifics

24   behind the data that you saw this morning.

25   Tremendous amount of data that we have. A lot of

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     1   analysis you can do. Lot more potential

     2   explanations behind what's going on here.

     3   And be happy to share this data with

     4   anybody who wants to dig into it further.

     5   So, again, I apologize for everybody

     6   giving me the time to toss those in. They were

     7   not on our agenda. And so I'll turn now to Gene

     8   Petersen, who's our next scheduled speaker.

     9   (Pause.)

    10   MS. NORBERG: Tracey Norberg with the

    11   Rubber Manufacturers Association. I just wanted

    12   to take a minute to wrap up from our morning

    13   discussion and the information that Ray has

    14   provided, and say I think we all from the tire

    15   industry really appreciate the dialogue that was

    16   provided this morning on a lot of very tough

    17   technical topics.

    18   And are planning, as we move forward, to

    19   provide additional information hopefully to answer

    20   some of the questions that have arisen here in the

    21   docket, in the comment period on this workshop.

    22   And we will be providing the complete ENVIRON

    23   report with all of the data and analyses during

    24   that comment period.

    25   But want to have a chance during the two

1   weeks intervening between now and the 22nd to be

2   able to incorporate discussion and comments that

3   we've had here today.

4   So I just wanted to kind of close the

5   discussion we had this morning, and let everyone

6   know that that's our plan moving forward.

7   Okay, so sorry about that, Gene. Thank

8   you. Turn it over to Gene Petersen from Consumers

9   Union.

10   MR. PETERSEN: Well, good afternoon,

11   everybody. Yes, my name is Gene Petersen; I am

12   tire program leader for Consumers Union.

13   Consumers Union is a company, if you're not

14   familiar with, they publish "Consumer Reports

15   Magazine" and consumerreports.org, a subscription

16   website.

17   We do test many products including

18   tires. And that's one of the things I'm going to

19   be talking about today.

20   Back in November Ray invited me to speak

21   to a November workshop. And there I talked about

22   consumers' perspective of tires, how they buy

23   tires, what they feel -- by tires, so forth. So

24   I'm going to kind of go back and cover some of

25   that again.

 1   And then I'd like to touch on how we

 2   rate tires, and talk about some of the comparisons

 3   to some of the proposed rating systems that have

 4   been proposed for rolling resistance.

 5   Next slide. Okay.

 6   (Pause.)

 7   MR. PETERSEN: Well, that concludes my

 8   presentation --

 9   (Laughter.)

10   MR. PETERSEN: Let me start off by

11   saying there's various sources where we get our

12   information from consumers. We're very interested

13   in what they want to know about tires. And I'm

14   going to just cover some of those sources.

15   First and foremost, we get letters from

16   readers. Last year alone we got over 1250

17   letters. And most of them go by my desk. So

18   that's one source.

19   Another source is we have a forum where

20   we have online discussions page called "Tire

21   Talk". And there you can write in; you can talk

22   about tires; you can share experiences; talk about

23   problems that you're having.

24   We have a lot of armchair experts, as I

25   like to call them, who share -- do some research

1   to, you know, tire companies just put profit above

2   anything else, tire dealers tend to mislead

3   people. Gee, never heard that happen. But those

4   are the type of things we get from letters.

5   Now, another, the discussions are

6   decidedly different. They're more reactive in the

7   sense that people are willing to do some research,

8   willing to find an answer, willing to share their

9   problem. Hey, I got a problem with my tire with

10   this car; anybody out there, can you help me out.

11   So I find that fascinating from that

12   standpoint. And also those people tend to like

13   cars, tend to want to buy the best products for

14   their cars. Whereas the letters, I think at least

15   what I get out of it is they look at cars as

16   appliances. So, two distinctively different

17   approaches.

18   Next slide, please. Readership surveys.

19   Think of these as the Nielsen ratings of

20   television show ratings, if you will. We do our

21   own analysis of who reads the magazine articles.

22   This gives us an idea of whether or not they found

23   it valuable, whether or not they used articles to

24   make a tire purchase.

25   How, you know, is it a product which we

1   tested that they feel that we should retest in

2   future years.

3   So this slide here is interesting

4   because this slide says buyers in the market for

5   tires. And what this means is buyers -- that

6   percentage of buyers that actually use the article

7   to make a purchase.

8   And here the red line is average of all

9   products shown in that monthly magazine. And then

10   the blue line above is tires. People really

11   relying on tire information to make a purchase.

12   Next slide, please. Now going to

13   consumerreports.org, our website. This is an

14   interesting slide. It's a nice presentation of

15   the number of hits that we track, that when people

16   come to our website.

17   If you look at this, the larger the font

18   the more hits. Number one is generally GPS

19   systems. It's just phenomenal. Everybody wants

20   to know about those systems.

21   But historically tires comes in second.

22   And this is not just one month, this has been

23   every month for the last two or three years have

24   viewed the data.

25   Tires, I look at that -- this is

1   something where people are really looking all

2   around the web, trying to find as much information

3   before they make a purchase. Because looking at

4   them they can't tell how they'll perform.

5   Next slide. Okay, we've also done some

6   market research, too, in order to see what people

7   are interested in, what their buying habits are

8   like.

9   We did a report about a year and a half

10   ago, and I'm just going to cover that in summary.

11   Where do people do research? Well, they rely on

12   the tire dealer 50 percent of the time. Websites

13   are used 43 percent of the time. And then can't

14   discount mentioning friends, mechanic,

15   advertising, magazines and even the car dealer.

16   Next slide. Who researches tires?

17   Well, 62 percent of our subscribers say they do.

18   Sixty-one percent in favor of looking for safer,

19   high performing tires.

20   People who own high-end cars or spend a

21   lot on tires do a lot of research; 58 percent of

22   those, of luxury sports cars, 72 percent who spend

23   more than $500.

24   Okay, all that said and done, though,

25   less than half, 45 percent only did no research at

1   all.

2   Next. What websites are researched?

3   Well, typically manufacturer websites, 50 percent

4   of the people surveyed went to those sites.

5   Thirty-five percent went to retailer sites. Also

6   32 percent claim to coming to us. And I have to

7   mention there's some very good sites out there

8   through TireRack, Discount Tire and 1010 Tires,

9   provide a lot of information and education on

10   tires.

11   Next. Considerations by buyers, what

12   did they look at when they made a tire purchase.

13   Now, you have to be careful with this because when

14   we asked this question sometimes I get the feeling

15   they're trying to tell me something that will make

16   me happy. The view as if they know something, and

17   they'll throw it out. That's fine.

18   But we've done some focus group testing

19   and there are others aside from just asking the

20   question, as well. They're the type of things

21   that come up, things like durability. But when

22   you ask about that, well, what do you mean by

23   durability, because it's something that there's no

24   rating for durability on a sidewall tire. Nobody

25   has a means of defining what that might be.

1   But it comes down to things like run-

2   flat resistance, road hazard resistance, perceived

3   quality, again another thing you can't put your

4   finger on. And so that's the sort of thing that

5   they're looking for when they say durability.

6   Tread life comes up second, generally.

7   And again, they don't say tread life, they'll say

8   I want a longer lasting tire. And in some ways

9   that's almost a durability aspect, as well.

10   Wet grip and handling. Stopping

11   distance. Price. They are common things that are

12   often spoken of.

13   We did focus group testing. We have

14   groups of women, we had groups of men. And we

15   asked, we went through some thorough questioning.

16   We found out, interesting enough, women tended to

17   do more research than men on tires. I thought

18   that was fascinating.

19   Okay. We asked people who made recent

20   tire purchases, okay, what did you get and why did

21   you get it. After going all through this, it came

22   down to two things. Price and availability. So,

23   throw all the other stuff out we said, it came

24   down to those two factors.

25   Next slide. Ratings, okay. Consumer

1   Reports, we have our own rating system that we use

2   for everything from testing cars to toasters,

3   what-have-you. It's one system, it's one

4   template. We use it for everything. It's a five-

5   point system.

6   And in the magazine we go from excellent

7   to poor. Interesting enough, when we use the same

8   system, which we do, for special publications we

9   often talk about better to worse, which I tend to

10   like more.

11   I want to talk about this system because

12   it does have some shortcomings for tires. When

13   you think about tires which we test, all season, S

14   and T speed rated models and winter tires.

15   Another subgroup would be performance summer, all

16   season and winter tire counterparts. And then we

17   do truck tires, all season, all terrain and winter

18   tires.

19   We try to take this one rating system

20   and apply it to all these tires. You don't end up

21   with much resolution. I'll give you an example.

22   Take snow traction. If you use this

23   template for snow traction, all winter tires are

24   going to be probably rated five. What I'll call

25   five is our excellent rating.

1   All summer UHB tires are probably going

2   to be graded one or poor, okay. All season tires,

3   they're going to be threes. That's it, okay.

4   You know, we do the testing and then we

5   report it that way. We haven't told the consumer

6   much that they couldn't have figured out for

7   themselves.

8   So what we do is we do it on a semi-

9   global basis. We use three different spans to

10   cover these three different categories.

11   The other thing I want to point out,

12   too, that's important here is within these three

13   categories we might use different vehicles,

14   different sized tire. That all has a direct

15   bearing on the ratings. Okay.

16   Next slide, please. tire tests. We do

17   all weather performance tire tests which involves

18   12 to 14 different ratings. We cover subjects

19   such as dry and wet braking, hydroplane

20   resistance, handling, winter grip, wet handling.

21   We also do rolling resistance. We use the SAE

22   J1269 test. We also evaluate ride comfort and

23   noise. And we do our own tread wear testing, as

24   well.

25   Now, from that, from those tests we

123

1   calculate an overall score. It's a average, a

2   weighted average of all those different

3   parameters. Weight with emphasis on safety-

4   related items, such as braking and hydroplane

5   resistance if it's an all season tire; certainly

6   winter grip comes into play, as well.

7   Okay, next slide, please. Okay. We do

8   rate rolling resistance, of course, but we say use

9   rolling resistance as a tie breaker. We don't put

10   a lot of weight into it because we feel it's a

11   value feature, okay. It's not a safety feature in

12   a tire, where our company, our mission is safety

13   over other things. So, as such, it gets a

14   relatively small weighting.

15   Why we would do that, too? Well,

16   there's some obvious reasons. Some tires, not

17   all, but some tires do compromise dry and wet grip

18   and even tread life for optimum rolling

19   resistance, okay.

20   But the point I want to make here is

21   consumers, they shouldn't be selecting tires on

22   rolling resistance, alone. There are more

23   important things to consider, we feel.

24   Next slide. Okay. This is a good

25   opportunity to show you a cross-section of our

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1   readers and why we provide that in various ways.

2   They want different levels of information.

3   I would say one type of reader is, he or

4   she is interested in nothing more than the overall

5   score. Don't give me all the intricate details,

6   just tell me which is the best one to buy, okay.

7   And that's where the overall score comes from, of

8   course.

9   Secondly is maybe somebody's interested

10   in a specific suit that meets their needs. An

11   example of this, somebody lives like in Florida.

12   They're not interested in snow traction, but they

13   might put emphasis on dry and wet braking and

14   hydroplane resistance. So they'll look at a tire

15   that meets their needs in that area.

16   And then there's a group, mostly on the

17   web, they want everything. They want all the

18   data, hardcore data behind the scenes that make up

19   the ratings.

20   Now, I have to tell you, we have done,

21   from time to time we have provided some raw data

22   to people. Even when we explain how to use it,

23   put restrictions on it, put limitations on it,

24   they still misuse it.

25   So it's not a good thing to do because

1   it tends to misinform. Even if the person you're

2   giving it to understands it, other people who join

3   into the forum section, they tend not to read all

4   the intricate details about it, and it's misused.

5   Next slide, please. As far as I know

6   there's not too many stores for getting

7   information on tire rolling resistance. We've

8   been doing it for a number of years now. And even

9   at that, I mean this is typical of our readers'

10   type of letters that I'll get. They're still not

11   satisfied.

12   And as this one reader wrote, I'll just

13   wrote what's in quotations here, "Your inclusion

14   of rolling resistance in your tire ratings is

15   helpful, but insufficient. You need to use

16   standardized testing to provide average mile per

17   gallon ratings." "Highlighting this critical

18   factor would doubtless improve competition and

19   innovation, as well." And, no, it wasn't Ray

20   Tuvell who wrote that.

21   Next slide, please. Okay. Now this

22   gets to the rolling resistance presentation

23   challenges, as I see them. And I'm looking at

24   some of the things that people have wrote in in

25   the past, as well, and some of the misconceptions.

1   First and foremost, let's talk about,

2   and we had talked about it this morning, rolling

3   resistance force and rolling resistance

4   coefficient. This is nice stuff, this is what you

5   need to find ratings. But this is not the sort of

6   data that at least our readers are interested in

7   seeing. It's just going to be too difficult for

8   them to understand it. Okay.

9   Then, again, it gets back, raw data is

10   always misused; they don't read the fine print

11   behind it, okay.

12   Something that I do like, you know,

13   which is on the basis of that last letter is

14   rating system that is related to gallons of fuel

15   or dollars saved. This is our typical reader.

16   They're looking to buy -- save a buck, save some

17   fuel. Okay. That's great. I'm all for that.

18   Here's the problem I have with rolling

19   resistance. It's a collective savings. Every

20   year when we do a rolling resistance test of peer,

21   peer-like tires, we'll take the best tire, the

22   tire with the least amount of rolling resistance,

23   and the worst tire in that program, with the most.

24   And then we'll run our highway fuel

25   economy test on a set of those tires. And I can

 1   tell you, even when we're looking at fairly large

 2   differences in rolling resistance of 30 to 40

 3   percent, which is huge in my mind we're only

 4   seeing gains of maybe one or two miles per gallon.

 5   Again, I think that's a lot but some people are

 6   not terribly impressed by that.

 7   And this brings to mind what rolling

 8   resistance is. It's not something that direct

 9   individuals are going to see a huge benefit from.

10   But as a state, as a nation, yeah, we can save a

11   lot of fuel and a lot of energy. They have to

12   understand that.

13   Next slide, please. Okay. There's been

14   a few rating systems that have been kicked around.

15   There's obviously more that should be considered,

16   as well. I'm just going to talk about these two

17   that I'm familiar with.

18   One is the EnergyStar system, which has

19   been brought up. Now EnergyStar system exists

20   today. It's used for a lot of products out there.

21   Typically you take the top 20 or so percent within

22   a line that are the most efficient. You give them

23   that award. Okay.

24   I like it because it's simple, it's

25   intuitive. It already has good consumer

1   awareness. People understand it, or at least

2   they've seen it before. It's not something new.

3   On the down side of that, on the lows,

4   it does tend to drive, I believe, consumers to buy

5   only on efficiency alone if it's got that award.

6   Okay. Again, that's not something I think people

7   should consider only. Getting back to other

8   performance features, I think, are more important.

9   Currency. I'm not sure how this is

10   going to work, but I can share, you know, my

11   experience in rating tires. There are always new

12   models coming out routinely.

13   Let's say you have a standard of

14   excellence up here with the top 20 percent in that

15   category. As new tires come into this, they'll be

16   introduced into that new excellence margin, okay.

17   What's going to happen to tires that are

18   on the fringe of that? Are they going to be

19   dropping out? How are you going to manage that?

20   You have the EnergyStar system award today, but

21   tomorrow you may not. I think there could be some

22   confusion there, but maybe all that can be worked

23   out. But I just wanted to make a note of that.

24   And then again, you got award for the

25   top 20 percent or so, but what of all the others,

1   the 80 percent down below. We make no mention of

2   them. We tell people nothing about those tires.

3   So that leads me up to the star system,

4   five stars. I do like that in the sense that it

5   does define all tires. But it, too, I think, has

6   definite disadvantages. And, again, it gets back

7   to can we use one scale to identify all tires. Or

8   are we just going to end up with a bunch of ones,

9   fives, and tires in the middle? I don't know.

10   It does have good awareness, but you

11   know what, the stars, particularly the stars as

12   shown here, they're related to safety. NHTSA

13   already uses them for their testing, even for

14   child-seat testing. So maybe something like fuel

15   economy, fuel pump icons or something would be

16   worthwhile. I don't know.

17   Next slide, please. Okay. Having said

18   all that, this year I'm testing 72 models of

19   tires. And this is the first year I've seen, at

20   least, a couple of tires that have actual labels

21   on the sidewall that would indicate they had some

22   fuel efficiency feature to them.

23   So while we talk about rating, while

24   Europe talks about rating, even the federal

25   government is talking about rating some time in

1   the future, tire companies are already ahead of

2   the game. They're rating tires now.

3   And how to explain this is this is

4   preliminary data, I must stress. We haven't

5   published this yet. But the rolling resistance

6   data was just complete a couple weeks ago. And

7   what I show here is the tire on your left has a

8   fuel gauge and reads full. It's an all season

9   HB rated tire.

10   And what I did is I show in a bar chart

11   form, again it's peer tires, 16 other HB rated

12   tires. And these are averages. And it has 32

13   percent lower rolling resistance. It was

14   interesting to see that.

15   The other tire is a winter tire, and I

16   don't know if you can note it here, but it has

17   something specific on the sidewall, it's not even

18   fooling around with symbols, it says ultra-low

19   rolling resistance on the sidewall of the tire.

20   And I compared that to its 11 miles of

21   tires within that category. That had only about

22   an 8 percent difference in rolling resistance from

23   the average of those peer models.

24   A couple points here. I was happy to

25   see that they were both more fuel efficient than

1   norm. But it brings up something else, is that

2   there's different levels of efficiency. And so

3   while we tell people that they're efficient, they

4   really don't know how efficient they are, unless

5   we had some standard format. So that's something

6   to consider in developing a grading system.

7   And then the next slide. I can't harp

8   on this enough, and it's been said before by

9   several people already. With any grading system

10   we need an education program for this to succeed,

11   okay.

12   Pressure, maintenance, it's got to be

13   the top priority. People who don't maintain tire

14   pressure, that has a direct relationship on

15   rolling resistance. We have to tell people,

16   particularly if they're going out to buy a fuel

17   efficient tire, that they're not going to get it

18   if they don't ever watch the inflation of that

19   tire and maintain it.

20   And secondly, too, and I've gotten some

21   letters on this already, particularly with Prius

22   owner tires, talking to Dan about this later --

23   before, rather, reminded me that when people talk

24   about replacing tires, it generally is they're

25   removing a worn out tire. And they're putting on

1   a new full tread tire.

2   Even if it's touted as being a fuel

3   efficient tire, that full tread tire may not be

4   any more efficient than that worn out tire. Or

5   may even be less efficient until it starts to

6   wear.

7   People have to understand that. We're

8   going to have to tell them that. We're going to

9   have to explain all that. Otherwise I'm going to

10   be getting more and more letters on this subject.

11   And then, you know, we talked of all the

12   question marks this morning about rolling

13   resistance, and I'm just throwing out a few things

14   that come to mind. Load, speed, ambient

15   temperature, rolling time, road texture, looking

16   at the temperature of the road. And you got to

17   look at the vehicle. The vehicle's overall

18   efficiency and its alignment.

19   You know, we think of the tire. It's

20   not a product that can stand alone. It's a

21   component of a system. It's a component of a

22   vehicle. So, you not only have to take care of

23   the tire, you have to take care of the vehicle to

24   get the most out of it.

25   I'll just leave you with that. Thank

1   you very much for allowing me to speak today.

2   MR. GOTTLIEB: Gene, thank you for a

3   great presentation. This is Adam Gottlieb with

4   the Energy Commission. In your professional

5   judgment do you have an idea of what the model

6   might look like? I mean aside from the

7   suggestions you gave. I mean is it a color code?

8   MR. PETERSEN: You mean a grading model?

9   MR. GOTTLIEB: Is it a color code, is it

10   a number? Is it a --

11   MR. PETERSEN: Ultimately what I would

12   like is one system universally. We're talking

13   about federal government, we're talking state of

14   California, we're looking at the European system

15   that may come out.

16   I would like to see one system only.

17   Because again, it's all about me. I'm going to be

18   getting --

19   (Laughter.)

20   MR. PETERSEN: -- these letters. And if

21   we end up with one, two or three systems, I'm

22   going to be spending all my time talking about

23   them, making -- trying to learn the virtues, the

24   positives and negatives about these systems. And

25   bring them to light for our readers.

1   We already see something like this with

2   speed ratings, and the temperature rating on a

3   sidewall tire. They're not directly related, but

4   they look at similar things. And you try to break

5   that down for people and it's just, it's hard.

6   So, to answer your question directly, I

7   don't have a specific proposal. But I would

8   really like one system, whatever that would be.

9   MR. TUVELL: Ray Tuvell with the Energy

10   Commission. You're not looking at actually a

11   combination of this slide and the next slide after

12   it, because in a way it's combined in my mind.

13   First of all, I think you've touched on

14   such a critical point on this consumer education

15   thing. And regardless of the system we come up

16   with, I'm interested in your views of how do we

17   introduce this out there, you know, this concept

18   of this subject of energy efficient tire.

19   I mean the mechanism for doing it, and

20   the slide before, for example, stamp it on a tire?

21   Just about everybody I've talked to, and I pretty

22   much agree, I don't look at a tire before I but

23   it. You could stamp it on there, but it's kind of

24   a waste for me. And I think it is for most

25   people.

135

         1   But it raises the question of then how

         2   do you get, whatever we come up with, what's an

         3   effective means of getting it out there to the

         4   consumers.

         5   MR. PETERSEN: Yeah. Well, I think it

         6   is a challenge. Certainly in some ways I like it

         7   on the sidewall tire, but in lieu of point of

         8   sale, I'm really fearful of that. Because the

         9   people who are behind the counter at point of sale

        10   may not be qualified at all to answer these type

        11   of questions.

        12   So either a label that goes on the tire,

        13   you know, a stick-on label when you buy it. Or

        14   they tend to fall off. Maybe if you put it, you

        15   see them by the time the tires are mounted on the

        16   vehicle.

        17   Or maybe a brochure that comes with it,

        18   with the tire, to show its placement among all its

        19   peer models. And, again, I don't know what this

        20   labeling system would be like. Some of that's

        21   going to dictate this.

        22   But within that labeling system there

        23   has to be a kind of brochure that runs through

        24   what the labeling means, and tells the people what

        25   can you expect to get out by purchasing this tire

 1   with its energy level.

 2   So that's going to be part of it. You

 3   can't separate the two. Got to have the education

 4   and you got to have the meaning behind the rating

 5   that you come up with. If it gets lost, it's not

 6   going to be meaningful.

 7   MR. TUVELL: And one extension of that,

 8   UTQG. The current grading system for temperature,

 9   traction and tread wear. Do you have -- I mean,

10   and its intention was a consumer information

11   program. Different from ours, but the same in

12   that idea we're supposed to use that to get

13   information out there.

14   Do you have enough experience along with

15   that to give us some lessons learned? I mean is

16   that a good model for us to build off of or not?

17   MR. PETERSEN: Well, in a November

18   workshop they talked about UTQG. I poked my

19   finger into it a bit, to talk about the

20   shortcomings, particularly of the temperature and

21   the tread wear portion of that.

22   Let's take the temperature portion

23   first. Most tires are generally graded A and B.

24   Few are graded C, because they're made more robust

25   now. The standard, minimum standard has changed.

 1   So is it worth having that to begin with?

 2   And secondly, we already have the speed

 3   rated that tends to relate with temperature

 4   performance, or temperature resistance. So I

 5   think that could be looked at.

 6   Tread wear, same thing. We look at

 7   tread wear ratings, first of all, nobody

 8   understands the index, nobody understands that

 9   it's comparative to some reference tire out there

10   that's labeled a grade of 100. Okay.

11   The second thing is it's a unit-less

12   type of number. Doesn't correlate to the miles to

13   be driven or tread wear warranty or some value

14   like that. So, it's somewhat meaningless. Again,

15   gets back to what people want. They would like to

16   see information in terms of which they understand

17   already.

18   Again, we can talk about tire

19   efficiency. It gets all down to miles per gallon,

20   dollars saved, at least with our readers.

21   So, anyway, let me just get back to

22   UTQG. This is one of the reasons why we look at

23   tread wear. We do our own tread wear testing

24   because we get better resolution than what's on

25   the sidewall tire.

1   And that sidewall rating, that's a self-

2   certification process. The manufacturer just has

3   to meet that level. Doesn't mean that the tire is

4   going to exceed that level, but it has to meet

5   that level from a minimum standpoint.

6   So you may not see a lot of resolution.

7   The type of numbers that reside on those tires

8   that compete against directly one another, they

9   all seem amazingly alike. So it might be more of

10   a marketing thing at that point.

11   And it's the tread wear rating, the

12   tread wear warranty, excuse me, because that's

13   where manufacturers put out money, you know,

14   essentially insuring the tire. And what we see in

15   our tread wear test, which people can use to judge

16   tread life.

17   Yes, Mike.

18   MR. WISCHHUSEN: Gene, thank you. This

19   is Mike Wischhusen with Michelin. To go back to

20   what you just said about UTQG tread wear, I want

21   to make sure we understand clearly.

22   Indeed, as most other federal automotive

23   safety regulations, self-certification is the

24   model, which means the manufacturer assures that

25   the tire passes whatever the test may be.

1   In the case of the UTQG tread wear, the

2   flaw, or the commonly interpreted flaw in the

3   tread wear system is not that it's self-

4   certification, it's that the regulation is written

5   that the grading is a minimum. The tire must

6   perform at least this well.

7   Okay, so the flaw is not the self-

8   certification, the flaw is a minimum regulatory

9   standard.

10   MR. PETERSEN: You're correct, I stand

11   corrected, thank you.

12   MR. MEIER: It's Alan Meier. Wonderful

13   presentation, thank you very much. I have a

14   question about testing. How many times of each

15   type do you test when you're doing a rolling

16   resistance measurements?

17   MR. PETERSEN: Well, you mean for a

18   model?

19   MR. MEIER: Yes.

20   MR. PETERSEN: Okay. Three. Three per

21   model. And what we do is we have a statistical

22   department down there in the Yonkers office.

23   They'll go through the data. They'll use a

24   program to come up with statistical differences.

25   And they'll show them within the five-point system

1   which we have.

2   MR. MEIER: Are you comfortable with

3   testing three tires as representative of one SKU?

4   MR. PETERSEN: I think comfortable. I

5   mean if anything, for the statistical process, if

6   there is large variability, it's knocked down a

7   bit. Okay.

8   So if a tire in a grouping, the more

9   precise you can get these tires to fit into these

10   things, if there's a large variability then

11   there's a larger group of tires that are

12   statistically the same.

13   MR. MEIER: So do you find a large

14   variability? Does it seem to be consistent with

15   what the California Energy Commission saw with

16   their variation?

17   MR. PETERSEN: It does vary. I mean,

18   and it gets back to, I think, we were talking --

19   you were alluding to it before, in some ways, the

20   quality of the tire.

21   Now let me point out. When we do our

22   testing we try to buy tires that are made within

23   the same week of production, same plant. These

24   are replacement tires because that's what we test.

25   We don't test original equipment unless the

1   original equipment is a replacement model, as

2   well.

3   We can see variability changes, they run

4   the gamut. And, you know, some of that could be

5   just things like how well they control uniformity

6   of the tire, you know.

7   So, why? I don't know. That's not my

8   job. But if there is a large variability it's

9   going to show up in how we place the tire through

10   the statistical analysis.

11   MR. MEIER: Back to the label, you got a

12   slant on labels which I thought was useful because

13   it shows the pros and cons on the rating systems.

14   Another part of this, which I think

15   shows up in all these labels, is the extent to

16   which -- let me not call it a label, let me call

17   it a rating system like you did.

18   It's not only the consumer response, but

19   the manufacturer response to how they will

20   basically adjust their production to in some way

21   coincide with the rating system.

22   And I wondered whether you had any

23   comments about that, whether maybe EnergyStar or a

24   rating system might, with the stars, the five

25   ratings, might -- which might the manufacturers

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1   respond to -- I'm not sure if I want to use

2   better, but differently. Do you have any sense

3   of --

4   MR. PETERSEN: I think that's something

5   you would have to ask them here. My concern is

6   not so much the manufacturers, as much as it is

7   how the consumers might view this.

8   And so I showed these two because these

9   are two systems that consumers are somewhat

10   familiar with already.

11   But, again, this is a question that the

12   tire makers are --

13   MR. MEIER: Yeah, another rating system

14   you might have put up there is the FTC label --

15   MR. PETERSEN: Sure.

16   MR. MEIER: -- for all appliances. And

17   then, also, of course, the automobile label, too.

18   There are other kinds of ratings systems --

19   MR. PETERSEN: Yeah, but --

20   MR. MEIER: -- that could have --

21   MR. PETERSEN: -- I know these are two

22   that we have been talking about. And I just

23   wanted to run through these. Because I haven't

24   seen a rating system yet that works perfectly for

25   this.

 1   And more to the point, you know, we were

 2   talking this morning about data down to the

 3   hundredth of a place, and yet keep in mind that

 4   we're looking at large differences, huge

 5   differences in rolling resistance that has to be

 6   there for this to be meaningful.

 7   So, you know, it gets back to a system

 8   that is really going to show the consumer, yeah,

 9   it makes a difference. If you tell me you're

10   going to use a five-point system, and you give it

11   an excellent five-point star for tire efficiency,

12   and I put it on my car and I don't see a

13   difference, that system has failed.

14   MR. MEIER: Yeah, in the November

15   workshop it was clear that from all the

16   presentations and discussions that the consumers

17   cannot be required to make a complicated decision

18   about energy efficiencies.

19   MR. PETERSEN: That's right.

20   MR. MEIER: They just were severely

21   limited in the calculation --

22   MR. PETERSEN: Well, let me add to that.

23   Who looks at it right now? The hybrid owners,

24   particularly the Prius owners. Okay. And anyone

25   else, when gasoline goes above $4 a gallon.

1   That's it.

2   You know, I think it's innovative that

3   some tire companies came out with some special

4   rolling resistance tires. And there's countless

5   other -- there's a number of others that have done

6   so in a route of showing how well their tire

7   performs against peer tires in the literature.

8   That's wonderful stuff, but right now

9   people don't care about it as much when gasoline

10   is relatively cheap.

11   MR. MEIER: Thank you.

12   MR. GUINEY: Dan Guiney, Yokohama.

13   Gene, you wouldn't call the five star a

14   categorical rating system. And do you also

15   consider the one to five, or best, better to worst

16   a categorical rating system?

17   MR. PETERSEN: I believe so, yes.

18   MR. GUINEY: And --

19   MR. SPEAKER: Could you get closer to

20   the mic?

21   MR. GUINEY: I'm sorry. In case of your

22   categorical rating system, you mentioned you do

23   rolling resistance testing. And your statistical

24   department, based on your categorical system,

25   Consumer Reports has decided where these

1   boundaries fall between your categorical system.

2   MR. PETERSEN: That's right.

3   MR. GUINEY: Have you given your readers

4   any relationship to what they can expect in terms

5   of fuel economy?

6   MR. PETERSEN: And I thought I covered

7   that, but that's a common question. We normally,

8   in the past sometimes we've given the data without

9   doing a fuel economy test.

10   So typically, like last year, as an

11   example, we presented the data and we did a fuel

12   economy test between the best and the worst. And

13   we gave them a bracket, this is what you can

14   expect if you bought the best tire versus the

15   worst tire within that group.

16   Just to give them a sense that this is

17   not a huge thing. This is not going to change

18   your Expedition into a Prius, okay. But it's

19   going to help. Okay.

20   And, in fact, you know, if you look at

21   that span, one to two miles per gallon, most of

22   the time that's from the best to the worst, most

23   of the time you're buying a tire that's probably

24   in the middle. So you might see something that's

25   negligible. In fact, you won't realize any

 1   savings unless you're a pretty good bookkeeper and

 2   look at your monthly consumption of fuel.

 3   And this is where it gets back to, I

 4   believe, people have to understand, yes, they can

 5   help themselves out; they might save a few hundred

 6   dollars a year by going to lower rolling

 7   resistance tires.

 8   But the big bang for the buck is if

 9   everybody goes to low rolling resistance tires,

10   what we can save as a state and a country. You

11   know, that's where the real savings are.

12   MR. GUINEY: So you've attempted to

13   describe the lowest category delta to the highest

14   category. Did that have anything to do with the

15   risk of misclassifying in the intervening

16   categories?

17   MR. PETERSEN: No.

18   MR. GUINEY: Did any of the proper

19   categorization or dropping them in the right

20   buckets go -- was that part of the process in the

21   statistics?

22   MR. PETERSEN: Yeah, that's the

23   statistics of it through the -- program defines

24   the buckets for us. And like you said this

25   morning, don't ask me too many questions about the

1   statistics, that's not my job. But they provide

2   the bins for me to utilize.

3   MR. GUINEY: And there was a question

4   this morning that maybe you can also answer. Are

5   the bin widths constant width that they recommend

6   or not?

7   MR. PETERSEN: I can't answer that.

8   That's a good question. I'm not -- it's all based

9   on individual statistics of the variability, of

10   the individual models versus -- well, of the

11   individual models.

12   MR. GUINEY: Thank you.

13   MR. AHUJA: This is Kamal Ahuja with the

14   ARB. In the letters to Consumer Report, can you

15   tell us what are the top few gripes people have

16   about tires that maybe the tire manufacturers can

17   consider those parameters and decide whether they

18   want to compromise on those issues or not?

19   MR. PETERSEN: Again, I mean, let me

20   just clarify that question. You're asking are

21   there other characteristics that people are

22   concerned about?

23   MR. AHUJA: No. I'm asking is from all

24   the letters that Consumer Reports receives, plus

25   the forums that you have online, would you be able

1   to tell us what the biggest gripes are of

2   consumers --

3   MR. PETERSEN: Oh, sure, --

4   MR. AHUJA: -- when it comes to tires?

5   And maybe the tire manufacturers may or may not

6   consider those parameters when they --

7   MR. PETERSEN: I think one of the things

8   that comes to mind is something that's relatively

9   new, a newer trend. Particularly on newer

10   vehicles. It's not a tire problem, per se. It's

11   an auto manufacturer problem.

12   We're seeing too many tire sizes out

13   there. And there's evolution to going to larger

14   and larger size tires on vehicles.

15   So, you're looking at people are often

16   writing, I can't find that tire; I can't buy that

17   tire because it's not available in my size. Okay.

18   And this is another subject matter which

19   I think, this is why we like the 4/32nd rule for

20   when tires approach 4/32nds of wear versus

21   2/32nds. The 4/32nd gives them some time to start

22   thinking about shopping for new tires. Because

23   they're going to need that time to get tires

24   ordered for their car. Okay.

25   And that's been a real big issue,

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1      particularly with late model cars.  And I see that

2      just getting worse.

3              When I started in the tire business some

4      30 years ago we had like 60 sizes, okay.  We're up

5      to over 312 now.  Okay.  That's incredible.  You

6      can't expect tire dealers to carry all those sizes

7      and all those models.  It just can't happen.

8              Some sizes are only unique to specific

9      cars.  So people are limited to what they can buy,

10     what's available for their car.  I think that's

11     the key one that I'd like to leave you with.

12             But, maybe another issue.  It's come,

13     from time to time, run-flat tires.  And, again,

14     this is one of those things that people like the

15     concept, they like the security.  Run-flat tires

16     work.  But they don't like the cost of buying

17     replacements.  They don't like the limited

18     mobility of some of the run-flat tires.

19             They always use the example, oh, yeah,

20     that's great that it's got a 50-mile range when

21     it's a flat -- mode condition.  But what happens

22     if I live out in Utah.  They always do this to me.

23     And, you know, I'm 200 miles from the nearest gas

24     station.  Well, yeah, then you got a problem.

25             (Laughter.)
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1   MR. PETERSEN: But, you know, that's

2   another feature that it does work well. But you

3   have to understand its capabilities and

4   limitations. Okay.

5   MR. AHUJA: Thanks for your response.

6   MR. PETERSEN: All right.

7   DR. WADDELL: Walt Waddell with Exxon

8   Mobil. One thing I want to point out, if you use

9   the CEC rolling resistance data versus the

10   statement that you use, you'd only buy replacement

11   tires.

12   So when you replace the replacement

13   tires you're going from OE to replacement. And

14   then in replacement there's also a range. So that

15   initial changeover is a considerable first-time

16   penalty --

17   MR. PETERSEN: That's correct.

18   DR. WADDELL: -- wider than what you

19   might actually see replacement only --

20   MR. PETERSEN: You might see that, yeah,

21   right.

22   DR. WADDELL: Okay.

23   MR. PETERSEN: But I think, too, one of

24   the things that I find interesting, I showed a

25   slide of those two tires that had fuel efficiency

1   labels on them. I find it remarkable that tire

2   companies are looking at that as a way to sell

3   tires. That's something new that we haven't seen

4   before.

5   So it'll be interesting to see how that

6   falls out.

7   Okay, thank you very much.

8   (Pause.)

9   MS. NORBERG: All right. Well, thank

10   you very much, Gene, for the great overview of a

11   complicated marketplace.

12   And our next presenter is Tim Robinson

13   from Bridgestone. I think Tim will build on a lot

14   of the context that Gene has discussed, and then

15   give some of our perspectives and our thoughts on

16   how a rating system might work.

17   So, Tim.

18   MR. ROBINSON: Okay, thank you, Tracey.

19   As Tracey mentioned, I'm Tim Robinson.

20   I work for Bridgestone; 25 years experience,

21   primarily in product development and testing. I'm

22   here today representing RMA and the RMA members.

23   My part of the presentation is tire

24   efficiency consumer information. And really I'm

25   going to break it down into two parts. The first

1   is rolling resistance coefficient versus rolling

2   resistance force. There's been a lot of dialogue

3   on this over the last several hours as to which is

4   the best basis for a rating system.

5   Then after that we'll look at the RMA

6   rating system proposal.

7   So, next slide, please. Before we go to

8   those proposals, what we'd like to do is just

9   rehash a little bit some of the requirements of

10   AB-844.

11   Three main components at least of the

12   25771. One is to develop a database of the energy

13   efficiency of a representative sample of tires

14   sold in the state.

15   The second is to develop a rating system

16   that will enable consumers to make informed

17   decisions when purchasing tires for their

18   vehicles. And this is key -- we'll hit this a

19   little bit later -- for their specific vehicle.

20   The third item is based upon the test

21   procedures pursuant to A and B, and the rating

22   system pursuant to B, develop requirements for

23   tire manufacturers to report to the Commission

24   energy efficiency of replacement tires sold in the

25   state.

 1   Next slide, please. So basically what

 2   makes a good rating system. So these are the

 3   criteria that the RMA developed, which we came up

 4   with, comprise a good rating system.

 5   First of all, is it easy to understand.

 6   Does it offer consumers a choice among products

 7   appropriate for their vehicle. And this becomes

 8   key later on as you'll see.

 9   When we say appropriate we mean the tire

10   that is applicable to the vehicle which carries

11   the load, the proper speed rating, so on and so

12   forth.

13   Does it lead consumers to suggest a tire

14   choice that is proper to the vehicle. Can it

15   provide information about potential fuel

16   efficiency. In addition to this, as Gene pointed

17   out, there's other criteria that need to be

18   considered when purchasing tires. Namely

19   attributes like tire safety.

20   So, is additional information provided,

21   safety, durability, relating potential tire

22   performance tradeoffs. And there are some

23   tradeoffs associated with trying to optimize a

24   tire for fuel efficiency, as you'll see a little

25   bit later.

          1   And last but not least does it foster

          2   competition among tire manufacturers to improve

          3   tire efficiency. And the answer to that is yes;

          4   we'll go through that a little bit later on.

          5   Next, please. So, first of all, the

          6   basis for a rating system. This is where we'll

          7   get into the details of what's the best way to

          8   base the rating system. Is it rolling resistance

          9   force, or the rolling resistance coefficient.

         10   We've designated rolling resistance

         11   coefficient as RRC, and rolling resistance force

         12   as RRF.

         13   Next, please. Just a few more

         14   definitions. This is really a repeat of some of

         15   the information that some other folks have shown,

         16   but rolling resistance is the energy dissipated by

         17   a tire per unit of distance traveled. The rolling

         18   resistance is typically measured on a 67-inch

         19   diameter wheel. There's a radial load applied to

         20   the tire similar to the vertical load associated

         21   with the weight of the vehicle. And we measure

         22   the force required to keep that tire rolling at a

         23   constant speed, load and inflation. That would be

         24   FC.

         25   So the rolling resistance force -- I'm

1   sorry, Fx, rolling resistance force, FX, at the

2   axle in the direction of travel required to make

3   the tire roll under a specific load, speed and

4   inflation pressure -- this is under stage A

5   conditions -- is defined as rolling resistance

6   force.

7   Now coefficient is that same

8   measurement, but it's divided by the radial load.

9   So we get an index as to how the rolling

10   resistance force applies to the tire as indexed to

11   the load carrying capacity of the tire.

12   Next slide, please. We took a look at

13   our databases and internal databases at

14   Bridgestone. We looked at over 10,000 pieces of

15   data. And we've actually correlated load index,

16   which to you folks means tire load capacity. The

17   higher the load index, the more load the tire can

18   carry.

19   On the left-hand vertical axis we have

20   rolling resistance force in pounds. And on the

21   right-hand vertical axis we have the rolling

22   resistance coefficient in pounds, as well.

23   What you can see here is the

24   relationship of rolling resistance force related

25   to load versus rolling resistance coefficient

1   related to load.

2   The bottomline is rolling resistance

3   coefficient is relatively flat and insensitive to

4   load capacity or load index; for rolling

5   resistance force is highly sensitive to load

6   index. So this will play out here in the next few

7   slides.

8   Next slide, please. So what we've done,

9   that was 10,000 datapoints. We've taken three

10   case studies, and this is actual SAE J1269 data on

11   three specific tires.

12   The first one's a P205/50R16, SAE J1269

13   test on this data is at 35 psi. What you can see

14   here is the rolling resistance coefficient for

15   this particular tire, relatively flat and

16   constant, with changes in percent load.

17   The rolling resistance force, however,

18   is highly dependent and highly sensitive upon load

19   carrying capability.

20   Now, what you see is when we report

21   numbers, for example we've used the SAE J1269

22   standard test condition to report a rolling

23   resistance force number of coefficient number.

24   That was always taken at 70 percent load.

25   Now, this is going to come into play a

1   little bit later here, but say, for example, we

2   put this tire on a vehicle which had a position

3   load of 1000 pounds. You can see where the 1000-

4   pound load would line up relative to the percent

5   load, carrying capability of that tire would be

6   about 85 percent.

7   Next slide, please. Sure, go ahead,

8   Ray.

9   MR. TUVELL: A question. Ray Tuvell

10   from the Energy Commission. Just a couple

11   clarifications.

12   On the J1269 test that you used here,

13   did you use multipoint? Or did you actually test

14   this tire at three separate loads?

15   MR. ROBINSON: This is a multipoint

16   regression.

17   MR. TUVELL: So, multipoint regression.

18   Okay, good. I wanted to clarify that.

19   And then also what conclusion are you

20   drawing on the rolling resistance coefficient?

21   Are you claiming that it, in fact, is a constant

22   number across all loads on this tire and on the

23   other ones? Or is, in fact, there some

24   variability?

25   MR. ROBINSON: On this tire here you see

1   it's relatively constant. Okay. Now, that's not

2   the same for every tire. Now, we have some

3   examples that we can show you later where it's not

4   exactly flat. It may be -- there may be

5   decreasing a little bit. But for the most part,

6   on the examples I'm going to show you it's

7   relatively flat and insensitive to load.

8   MR. TUVELL: The reason I bring this up

9   because I think that there is some confusion on

10   this issue. In fact, just let me mention that in

11   the RMA letter of March 3rd where this originally

12   came up, and there's some comments in there that

13   said something about the Energy Commission

14   proposal of RRF.

15   I mean there was very -- let me know

16   when you hear an Energy Commission proposal,

17   because I think I would have known about it. The

18   Energy Commission has not made a proposal on RRF

19   or RRC, either one. Let me clarify that.

20   What has happened on this issue, for

21   everybody's proper understanding, is some

22   questions have been raised about uncertainties of

23   RRC. Okay. We had been led to believe that RRC

24   was, in fact, a constant for tires. And some

25   NHTSA studies have suggested, no, it's not.

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             1   MR. ROBINSON: Well, let me clarify

             2   that, Ray. I think I remember what you're talking

             3   about. Riley here, and some of the folks at VTRC

             4   have indicated, and they are correct, that rolling

             5   resistance coefficient is not linear when you get

             6   into the very low load carrying capabilities of

             7   the tire.

             8   For all practical purposes for the range

             9   for which we use tires in the U.S., between about

            10   50 percent and 100 percent of the load capacity of

            11   the tire, it is linear.

            12   MR. TUVELL: Okay. And see, that's what

            13   we're trying to get some grasp of. Because we

            14   haven't seen this data before.

            15   MR. ROBINSON: Right.

            16   MR. TUVELL: As far as -- I mean there's

            17   not a lot of J1269 multipoint data out in the

            18   public domain. And there's not a lot of people

            19   using linear regression to figure out RRC at

            20   different levels.

            21   And so up to this point it had been

            22   presented to us as a constant, you can count on

            23   it. And then till people started looking at it a

            24   little closer, and said, well, it's not a

            25   constant.

1   Now, so what happens is it raises the

2   question of well, then if it's variable, how

3   variable is it. Is it nearly constant, or does it

4   vary up to 10 percent over the 50 to 100 percent

5   load --

6   MR. ROBINSON: No, it's nearly constant,

7   within the load capacity of the tire from 50 to

8   100 percent.

9   MR. TUVELL: Yeah, and so that's one of

10   the points I really wanted to stress here. I

11   think there's been a lot of misunderstanding of

12   what is the disagreement, or what's the issue

13   here. And it is we haven't seen enough RRC data

14   over separate loads to have this level of comfort.

15   And that it's simply been assumed in the

16   past that it's a constant, it's a constant, and

17   people started raising the question.

18   MR. ROBINSON: Good point. No, the data

19   that Riley here, and some of the folks at VTRC

20   presented, it shows nonlinearity, but that's due

21   to the fact that they were in the load range of

22   the tire, the percent load capacity of the tire

23   was much lower than what would be used in

24   practical applications.

25   Okay, so this is one tire. This is a

1   205/50R16.

2   Let's go to the next slide. Now this is

3   an up-size tire. This tire is bigger, obviously.

4   It's a 215/60R16; same scenario where the rolling

5   resistance coefficient is constant, then the

6   practical application of the usage of the tire,

7   the rolling resistance force is sensitive to,

8   highly sensitive to load.

9   But what you see here, these are the

10   conditions in orange that would be reported for

11   the standard SAE J1269 reporting format. But, if

12   we take the same tire and apply it to the same

13   vehicle that we had the previous tire applied to,

14   which has a 1000-pound axle load, the position

15   we're putting it on, you can see now that the blue

16   line is much lower on the percent load capacity

17   that the tire would carry.

18   So let's go to the next slide, please.

19   Third example, and this is a 225/60R16, a bigger

20   tire yet. So we have small, medium and large.

21   Same scenario, but you can see now the additional

22   shift of the 1000-pound load on this tire,

23   relative to its percent load carrying capability.

24   So, we go to the next slide, I think

25   this will help illustrate the point we're trying

1   to make.

2   Now, what we have on this slide here,

3   this is case study one. This is taking those same

4   three tires we looked at previously. And based

5   upon these load indices this is 86, 94, 97, which

6   is typically outside the practical range that you

7   would see for a given vehicle, which we'll get

8   into in a second.

9   This is now applied rolling resistance

10   force in pounds versus percent load. Now, the SAE

11   J1269, if you look at the rolling resistance force

12   based proposal, all those numbers would be

13   reported at the 70 percent load condition.

14   And these are the numbers that you would

15   get if we would label those tires based upon using

16   that rolling resistance force proposal. You'd see

17   a 9.93 for the smallest tire, and a 13.06 for the

18   largest tire.

19   So that would lead you to believe that

20   the smallest tire would be the most energy

21   efficient.

22   However, if you take these same tires

23   and apply them all to the same vehicle, they all

24   see the same radial load, same Fz load, if you

25   take that and then you apply that 1000-pound load,

1   and you look at where that falls at on the curves,

2   on the percent load for each of these specific

3   tires, the rolling resistance force level you get

4   is in reverse of what you would see if you used

5   rolling resistance force.

6   So rolling resistance coefficient for a

7   given vehicle, which is mandated in AB-844, using

8   rolling resistance coefficient, I'll get to in a

9   second, but rolling resistance force at 1000-pound

10   vehicle load can be misleading and actually a

11   reversal, if you use the rolling resistance force

12   J1269 as an indicator.

13   Now, however, if you look at the RMA

14   proposal, which is looking at the SAE J1269

15   rolling resistance coefficient, at 70 percent load

16   you can see the rank order here, the kilogram/tons

17   lines up almost exactly with what the vehicle

18   owner would see on their specific vehicle.

19   So, using the rolling resistance force

20   based proposal can lead to misleading applications

21   of tires to the vehicle and the end user would not

22   see the expected results. However, using the RMA

23   proposal of rolling resistance coefficient you

24   would get the exact rank order is what the

25   consumer would see on their vehicle.

1   MR. POPIO: Hey, Tim, excuse me. Jim

2   Popio, Smithers Scientific.

3   MR. ROBINSON: Yeah, Jim.

4   MR. POPIO: On that, is that because

5   you're doing 70 percent of the load, you're not

6   calculating your regression at the same load,

7   correct?

8   In this example you're running 70

9   percent of the match load of the tire, right?

10   MR. ROBINSON: That's correct.

11   MR. POPIO: Okay. What would happen if

12   you ran -- if you put the same load in for each of

13   the tires, like 500 pounds or something? How

14   would the rolling resistance force rank?

15   MR. ROBINSON: That's what we did on the

16   second, in the second column, the one that's

17   highlighted in blue.

18   MR. POPIO: Okay, so you picked the

19   regression, you put 1000 pounds in. Is that what

20   that is?

21   MR. ROBINSON: Yes.

22   MR. POPIO: Okay. All right, thanks.

23   MR. ROBINSON: Okay.

24   MR. TUVELL: Ray Tuvell with the Energy

25   Commission. I wanted to get back to a conclusion

1   that you reached, to see if you and I have a

2   proper understanding about the application of that

3   conclusion.

4   Your conclusion about saying that RRC is

5   the proper unit for comparing these tires and RRF

6   isn't is contingent on the fact that these are

7   separate load index tires, correct? In other

8   words, if we were comparing all tires on the same

9   load index --

10   MR. ROBINSON: Right.

11   MR. TUVELL: -- then it wouldn't matter,

12   right?

13   MR. ROBINSON: That's correct.

14   MR. TUVELL: RRF and RR -- okay. And so

15   I just wanted to make sure we have that

16   understanding, because you seem to imply that one

17   is right and one is wrong. That's not --

18   MR. ROBINSON: If you're comparing the

19   exact --

20   MR. TUVELL: -- all the cases.

21   MR. ROBINSON: -- same load index, Ray,

22   then they're the same thing. Rolling resistance

23   force and rolling resistance coefficient are the

24   same thing. So.

25   MR. TUVELL: Good, good. And then so

1   let me go to the other point then, because -- and

2   I don't know the answer to this, and I hope

3   somebody will help us.

4   I think this is an interesting analysis

5   from the perspective of the consumer that would go

6   out into the marketplace and say, I'm interested

7   in any number of different sizes of tires as long

8   as they fit my wheel.

9   MR. ROBINSON: Yep.

10   MR. TUVELL: Do you have a sense of how

11   many percent of consumers fit in that category

12   versus consumers that are essentially saying I

13   only want the same size tire I got now. I mean,

14   that's it, give me that tire.

15   MR. ROBINSON: I'd have to probably

16   defer to, I don't know, maybe Dan or Gene. I know

17   there are --

18   MR. PETERSEN: May I make a statement on

19   that?

20   MR. ROBINSON: Sure.

21   MR. PETERSEN: We recommend consumers

22   stay with -- we recommend that consumers stay with

23   the same size tire that came on the vehicle.

24   Follow the placard that's on the side of the

25   vehicle in the door jamb area.

1   We don't tell them to deviate from that.

2   I mean you could go up. Certainly you can't go

3   down and have an overloaded situation. But still,

4   we don't recommend that they vary off of that.

5   MR. ROBINSON: But there is a

6   significant number of folks who do want to up-

7   size. And they do want to go with a bigger tire.

8   So, I don't know, Dan, if you want to address that

9   or not.

10   MR. TUVELL: Go ahead, Dan.

11   MR. GUINEY: Yeah, I do believe, and I

12   have heard people state, I don't have the data,

13   that a large, a fairly large percentage of people

14   go with exactly what the placard specification

15   was.

16   And it is true that people plus-size.

17   But the problem that comes in with plus-sizing is

18   that load index has to be checked. In a lot of

19   calls to our call center -- I also have the call

20   centers that report to me at Yokohama -- we get

21   questions about well, my 94 in place of my 97 in

22   an up-size situation still handles the load of the

23   vehicle, even though the 08 manufacturer placard

24   says something else.

25   And that's the one that we -- when we

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1   talk about inappropriate selection, that is a

2   classic inappropriate selection for us, and we

3   have to deal with it.

4   MR. TUVELL: Of course, the reason --

5   let me clarify the reason I'm bringing thus up. I

6   didn't bring it up for the sake of disagreeing

7   with you.

8   I wanted to bring it up in the context

9   of what's going through our minds. If the vast

10   majority of consumers in the tire marketplace are

11   looking for essentially the same size tire they

12   have right now, okay, then I think we just agreed

13   that well, RRC, RRF, either one will work for

14   that. They'll get the same rank order of tires.

15   MR. ROBINSON: That's correct.

16   MR. TUVELL: Okay. And so the

17   circumstance where RRC seems to have a specific

18   application that RRF would be misleading is

19   exactly the one you gave here. I certainly agree.

20   In other words, you start comparing

21   different load index tires.

22   MR. ROBINSON: Right.

23   MR. TUVELL: Okay. And so I just wanted

24   to share that observation from this content. We

25   see that and we understand that. Okay. We

1   understand that.

2   And so I don't want there to be any

3   misunderstanding in our mind about that, okay. Or

4   your minds about that.

5   MR. ROBINSON: Well, as you'll see a

6   little bit later, Ray, there are some other

7   reasonings for going with rolling resistance

8   coefficient. But we'll get to those in a second,

9   so.

10   Okay, so this is a hypothetical

11   situation. Now we wanted to bring it down to a

12   more practical basis.

13   Can we go to the next slide, please.

14   Now, this does happen in the industry, and we

15   picked three case studies looking at a Toyota

16   Corolla, a Chevy Malibu, and then a C-1500 4x2, I

17   believe.

18   And these are base and option size tires

19   on the 2007 Toyota Corolla. The exact same

20   situation occurs. Now, this is a possibility,

21   and, in fact, I'm sure there's been cases where

22   people have asked to up-size, going from the

23   185/65R15 up to the option size, 196/65R15,

24   because obviously if it was a base and option size

25   tire they'd both fit on the vehicle.

1   Of course, we would never advocate going

2   from the bigger tire to the smaller tire because

3   it will not carry the load. So that's a safety

4   issue.

5   But, again, in this case, looking at

6   rolling resistance force based system, the smaller

7   tire would indicate 7.43, the larger tire 7.97.

8   But applying these at the same vehicle load, you

9   get the reversal. In actuality you'll get the

10   benefit by putting the bigger tire on the vehicle

11   when it comes to rolling resistance force.

12   Now, we looked at this one at both 35

13   and 30 psi and the relationship holds true. And

14   analogous to the first case study, the RMA

15   proposal using rolling resistance coefficient

16   lines up exactly and gives you the exact rank

17   order as if you would apply these tires to the

18   same vehicle.

19   Okay, next slide, please. Back one.

20   The same thing, we did the same thing with the

21   Malibu. The exact same situation holds true.

22   I'll not go into this in a lot of detail. Again,

23   rank order for the RMA proposal using rolling

24   resistance coefficient. If you would upsize on

25   this particular vehicle, this is the base and

171

         1   option size, so an entirely believable and

         2   practical situation of upsizing on a Malibu, rank

         3   order using RRC is better than using rolling

         4   resistance force in this scenario.

         5   One more, please. The last is the Chevy

         6   Suburban. Not going to get into this in a lot of

         7   detail. But there are some folks who buy

         8   Suburbans with P-metric tires and want to upsize

         9   to an LT-metric size tire. And they can do that.

        10   And then again you'll get the exact same

        11   relationship using the RMA-proposed rolling

        12   resistance coefficient as an indicator, as opposed

        13   to the SAE J1269 rolling resistance force as an

        14   indicator.

        15   Next slide, please. So, I've tried to

        16   summarize all of this. And all this does is just

        17   take the rolling resistance force based proposal

        18   and compare that to the same tires applied on the

        19   same vehicle, whether it be the Corolla, Malibu or

        20   Suburban.

        21   And really this just summarizes it comes

        22   to the same conclusion that the RMA proposal of

        23   using rolling resistance coefficient for swapping

        24   out sizes or going with a base versus an option

        25   size is a better indicator rank order predictor

1   than rolling resistance force for fuel efficiency

2   for consumers.

3   Okay, next slide, please. So in

4   summary, as far as rolling resistance coefficient

5   versus rolling resistance force. The RMA

6   recommends using rolling resistance coefficient as

7   the basis for a fuel efficiency rating system.

8   It's more accurate than rolling resistance force

9   in providing the consumer with fuel efficiency

10   information, and direction of choice for their

11   vehicle, we're looking at different tire sizes.

12   It offers consumers a choice among

13   products appropriate for their vehicle. It also

14   lends consumers to select the tire choice that is

15   appropriate from a fuel efficiency standpoint.

16   And also, as I mentioned before, we always go from

17   the lower to a higher load index to make sure that

18   the tire will carry the load.

19   Last point. The recommended ISO 28580

20   test procedure for fuel efficiency rating is based

21   upon rolling resistance coefficient also. So the

22   lab alignment is based upon rolling resistance

23   coefficient. And the data quality requirements

24   for repeatability among machines for a candidate

25   lab versus a reference lab is all based upon

1   rolling resistance coefficient.

2   Those are all points and positives

3   leaning towards rolling resistance coefficient as

4   opposed to rolling resistance force.

5   Okay.

6   MR. TONACHEL: This is Luke Tonachel

7   from NRDC. A quick clarification. When a

8   consumer uses a different tire in the examples

9   that you provided, are there any other changes to

10   the vehicle that have to be made in order to do

11   those tire choices that you used as examples?

12   MR. ROBINSON: Well, the only minor

13   issue would be wheels. And we looked at the wheel

14   weight of a base tire versus an option tire.

15   They're within a couple pounds, which has no real

16   significant impact upon the results. So, other

17   than that, no.

18   MR. TUVELL: Ray Tuvell with the Energy

19   Commission. Tim, on your last point there, I just

20   want to clarify one thing.

21   So, in the ISO 28580 test protocol, as

22   you well know, the first number that's calculated

23   is the output of that test protocol is RRF,

24   agreed?

25   MR. ROBINSON: That's correct. Yes.

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1              MR. TUVELL:  Okay, so I mean ISO 28580

2    doesn't dictate the need to have an RRC rating

3    system.  You're going to have RRF and RRC both, if

4    you want it.  It doesn't really matter.

5              MR. ROBINSON:  You have -- you're right,

6    Ray, you have to measure RRF to calculate RRC.

7              MR. TUVELL:  Okay, I just wanted to make

8    sure that there's no absolute must relationship

9    between 28580 and RRC.

10             MR. ROBINSON:  Well, it's just that the

11   basis for lab alignment is based upon rolling

12   resistance coefficient.

13             MR. TUVELL:  Oh, yeah, no, I know that.

14   But I think you and I are agreeing that you first

15   got an RRF number, and then you simply divided it

16   by load to get RRC.  It's a simple mathematical

17   thing; it's not a process problem or use of units

18   or anything like that.

19             MR. ROBINSON:  That's the definition,

20   correct.

21             MR. TUVELL:  Great.  Thanks, Tim.

22             MR. GUINEY:  The one thing in ISO 280--

23   whatever,

24             MR. ROBINSON:  28580.

25             MR. GUINEY:  -- 28580, that is specific
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1     to rolling resistance coefficient was the

2     repeatability number.  Because if you don't use a

3     coefficient then we don't have to publish a number

4     of different scenarios under which force

5     repeatability would have.

6          Because if you don't use an index then

7     you're in big trouble when you're trying to

8     specify the repeatability requirements of a

9     machine.

10          MR. LAMBILLOTTE:  Bruce Lambillotte with

11     Smithers Scientific.

12          MR. ROBINSON:  Yeah, Bruce.

13          MR. LAMBILLOTTE:  Tim, I'm looking at

14     some data that we had generated where we were

15     working with tires from the same manufacturer, and

16     they're actually from the same design.  And to a

17     large extent, it's supporting what you're saying.

18          It's showing that as weight goes up

19     there's a correlation when you look at this whole

20     range of sizes, when you see as weight goes up

21     we're seeing higher and higher rolling forces, but

22     we're seeing lower and lower rolling resistance

23     coefficients.

24          When you look at these tires that are

25     heavy, that have high rolling forces, but low
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1   rolling coefficients, is any actual fuel economy

2   getting done to support the fact that they're

3   better for fuel economy?

4   I'm not talking rolling resistance

5   testing, I'm talking actual fuel economy testing.

6   MR. ROBINSON: Well, I'm not sure what

7   you're comparing. It sounds like apples to

8   oranges because you got tires that have a higher

9   weight and a higher inherent rolling resistance

10   coefficient. And you're looking at the slope of

11   that curve versus something that's a little bit

12   different that has a lower weight. So, like I

13   said, --

14   MR. LAMBILLOTTE: Oh, I'm not confusing

15   it at all. I'm looking at two charts that have

16   inverse correlations that have pretty good

17   relationships. These are all tires from the same

18   manufacturer; these are tires of the same design.

19   Where I'm looking at increasing weight has a

20   pretty high correlation to higher rolling forces,

21   but higher weight is inversely related to the

22   rolling resistance coefficient.

23   And I'm not arguing that this is bad for

24   rolling resistance, what I'm really asking is have

25   these kind of relationships really been looked at

1   from an actual fuel economy testing. Because we

2   haven't done that and maybe you have.

3   MR. WISCHHUSEN: Bruce, this is Mike

4   Wischhusen, Michelin. Just to clarify your

5   question, you're looking at different sizes within

6   a tire line?

7   MR. LAMBILLOTTE: That's correct, --

8   MR. WISCHHUSEN: Okay, so --

9   MR. LAMBILLOTTE: -- different load --

10   MR. WISCHHUSEN: Right, so the only

11   valid fuel economy comparison would be between

12   different tires that fit the same vehicle. And in

13   that case, that's precisely the case Tim has gone

14   through. The larger tire with the larger load

15   capacity will operate at a lower percentage of its

16   total load, and therefore have a lower rolling

17   force which would give better fuel economy.

18   So, you can't compare -- you can't ask

19   the fuel economy question between two tires that

20   will not fit on the same vehicle.

21   MR. LAMBILLOTTE: I agree with you. But

22   if you start looking within tires that fit on the

23   same wheel and can be mounted on the same vehicle,

24   we also have had some reversals in direction, and

25   increasing rolling forces, but reduced rolling

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1      resistance coefficients.

2              That's where my interest lies.

3              MR. ROBINSON:  Well, I don't know if

4      we've answered your question, Bruce.  But maybe we

5      can have an offline dialogue on that one.

6              MR. LAMBILLOTTE:  That would be good.

7              MR. ROBINSON:  Okay, next slide, please.

8      Okay, so now we're moving from rolling resistance

9      force versus rolling resistance coefficient into a

10     rating system.

11             So the RMA proposal for a rating system,

12     first of all, we're looking at the NHTSA

13     StarsOnCars program.  Everybody, for the most

14     part, is familiar with that.  And it rates aspects

15     of vehicles in the five star rating system.

16             Current applications are a crash test,

17     rollover ratings; it's also used for new car

18     seating regulation.

19             Consumers are aware of this.  They're

20     starting to become familiar with it, and have some

21     knowledge of the five star approach.

22             RMA believes developing a five star tire

23     efficiency rating system would benefit consumers

24     by providing information consistent with other

25     consumer information.
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1              I'm not so sure that we're locked into a
2         star rating system.  But I think we're locked in,
3         or at least our proposal is a bin type system,
4         whether we call it stars or whether we call it
5         letter grades, or fuel pmps or whatever.  I think
6         we're open to that.
7              Okay, so now we get into the basis of
8         the RMA proposal.  Our five star rolling
9         resistance coefficient rating system.  This is
10        what we have lined up.  And so a lot of questions
11        are going to be answered in the next few slides,
12        so just hold on for a second here.
13             But our proposals, we have a five star
14        rating system.  One star would be anything greater
15        than 12 kilogram/tons.  The bin widths are 1.5
16        kilogram/tons.  So a two star would be anything
17        between 10.5 and 12 kilogram/tons.
18             And going down to the five star, at
19        least -- up to the five star level, which would be
20        the lowest rolling resistance coefficient, would
21        be 7.5 kilogram/tons or lower.
22             Next slide, please.  And this is how we
23        come up with all of this.  As Mark mentioned when
24        he presented all of his data, this represents,
25        this curve, about 88 percent of the domestic
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1   market. And it's over 1000 datapoints.

2   For all of the tires that were combined,

3   I think 1007 datapoints from the combined

4   California database as well as the RMA database.

5   But you see, based upon the

6   distribution, we have a fairly evenly distributed

7   between five star, four, three, two and one. Of

8   course, the middle, three star system, would

9   represent about 46 percent of the current

10   distribution.

11   The chart you see on here is a sales-

12   weighted rolling resistance coefficient of the

13   percent of the current market as we've defined it,

14   which would fall into our proposed rating system.

15   One percent of the current tires would be five

16   star down to about 7 percent of the current tires

17   would be one star.

18   Next, please. So Consumers Choice had a

19   proposed rolling resistance rating system. This

20   is really a rehash of what Mark presented. But

21   for the most part, the database that we collected

22   we feel is a good representation of what exists in

23   the current marketplace. And accounts for about

24   88 percent of the domestic replacement tire

25   market. The other bullet points here you've

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 1   already seen before, so we'll skip to the next

 2   slide, please.

 3   Digging into this information in a

 4   little bit more detail. We took this 1007

 5   datapoints and said, okay, from a consumer's

 6   standpoint, let's take a look at it and see what

 7   would be available based upon speed rating.

 8   One of our criteria is you replace a

 9   tire with an equal-to or higher load index, make

10   sure the tire carries the load. And also you make

11   sure you have the proper speed rating on the tire.

12   So what we have here is all the combined

13   data. And on the horizontal axis we have whether

14   it's a one, two, three, four or five star system

15   based upon our data.

16   Also indexed on the vertical system, we

17   have speed rating. And as you can see, the one

18   star through two, three, four star rating systems

19   include all of the available speed indices.

20   However, when you get to five star, the

21   nature of the tires, we don't have any five star

22   rated W, Y or Z rated tires.

23   Next, please. Now taking a subset of

24   that data and looking at a specific size, the

25   195/65R15, we have 102 datasets. A similar type

 1   scenario. You can see we have a pretty good

 2   distribution between one and four stars. We have

 3   no choices, though, in the five star rating

 4   category. But for the most part, if a consumer

 5   would come in and wanted to buy a 195/65R15, he

 6   would have a choice between one and four stars for

 7   any speed rating. That's pretty much applicable

 8   for that size tire.

 9   MR. TUVELL: Tim, Ray Tuvell from the

10   Energy Commission. Let me just clarify again how

11   you got here. It appears to me that what you did

12   is you created a five star system based on RRC

13   where you rated all passenger tires against each

14   other, is that correct? Regardless of size. I

15   mean that's the concept.

16   All passenger tires on the market

17   regardless of size are rated on the five star

18   system based on RRC.

19   MR. ROBINSON: On a previous slide,

20   correct.

21   MR. TUVELL: Okay. So, and the net

22   effect of that is, in this case here on this

23   slide, you have no tires that are in the five star

24   system, with five stars for the 195/65-15s.

25   MR. ROBINSON: Within our dataset.

1   MR. TUVELL: Correct. Okay, so let's

2   say, for the sake of argument, that this, in fact,

3   is all tires that are this size. There are none

4   in the five star.

5   MR. ROBINSON: Correct.

6   MR. TUVELL: What message does that say

7   to consumers?

8   MR. ROBINSON: It tells them they have a

9   choice between one and four stars.

10   MR. TUVELL: Okay, right. But why --

11   okay, so I'm a consumer. I want the lowest

12   rolling resistance tire. Why don't I have a five

13   star tire in the 195/65-15 that fits my vehicle?

14   MR. ROBINSON: Well, that's when it gets

15   down to market conditions and market pressure.

16   You can be assured that once individual tire

17   companies understand that there's a demand out

18   there, people start to complain and say, hey, we

19   have an opportunity to sell a 195/65R15 tire if we

20   had a five star rating tire, you can be assured

21   they're going to start to develop one.

22   MR. TUVELL: Okay. Now here's where I'm

23   going with that. Doesn't this then become a

24   shortcoming of the system where you rate all tires

25   against each other, versus let's say you took all

1   195/65-15s and just rated them against 195/65-15s?

2   MR. ROBINSON: Well, that's what we're

3   doing.

4   MR. TUVELL: No, no, I mean your system,

5   in the very beginning, I looked at this from a

6   size-specific basis. And I divided those sizes,

7   you know, all 195/65-15s in the market, and I

8   divided them into five categories, so that, in

9   fact, there would be a five star -- there would e

10   a group of five star 195/65-15s.

11   So the consumer then can go out and say,

12   oh, yes, here are the lowest rolling resistance

13   195/65-15s in the marketplace because they're a

14   five star.

15   MR. ROBINSON: Well, you could do that,

16   but you'd have to slide the scale based upon the

17   representative market.

18   MR. TUVELL: No, I mean you wouldn't

19   have to do it that way. I'm just saying why not

20   just rate tires based on their size. In other

21   words, take all the same size tire and base the

22   rating efficiency or energy efficiency on the

23   size, itself, for each size.

24   MR. ROBINSON: Well, then you get into

25   the fact you won't have the opportunity to compare

 1   size to size.

 2   MR. TUVELL: Okay, but we agree that

 3   that's a small portion of the marketplace.

 4   MR. ROBINSON: But it's still a -- I

 5   don't know if it's small. It's a significant

 6   portion of the marketplace.

 7   MR. TUVELL: Okay, but so here's what

 8   I'm getting to. If that becomes the driving

 9   factor, that gee, we have to come up with a

10   methodology by which consumers can compare

11   different sized tires, then do you end up living

12   with a system where there is no five star tire in

13   certain categories, versus wait, maybe let's not

14   focus so much on the need to compare all size

15   tires against -- or all, you know, for a consumer

16   to compare different sized tires against each

17   other.

18   And give them a system where they go out

19   looking for a five star tire and they can find it,

20   in their size. And they'll find it every time.

21   MR. ROBINSON: Mike, do you want to

22   comment on this?

23   MR. WISCHHUSEN: This is Mike

24   Wischhusen, Michelin. A couple points. Somebody

25   made the comment earlier today, I think there are

1   in excess of 300 active tire sizes. So, you know,

2   first you're looking at 300 different rating

3   systems.

4   And now to try to take care of my

5   friend, Gene, try and explain that -- there's a

6   balance. I mean there's a natural balance between

7   complexity and effectiveness.

8   Tire size is a way you can do this.

9   Then you've got 300 plus different rating systems.

10   You could do it on a range of max load capacity,

11   okay. And that begins to address what Tim is

12   talking about where you may be looking at some

13   size flexibility.

14   You could look at it on the basis of

15   outside diameter of the tire. You could have

16   different classes of outside diameter of the tire.

17   Because the outside diameter of the tire is a very

18   close approximation of load capacity of the tire.

19   So there are many ways to do it, but

20   it's a balance of complexity versus effectiveness,

21   ability to convey the information to the consumer.

22   And I'm with Tim, and actually I'm going

23   to address this point in my presentation later,

24   having an empty bucket at the top of the scale is

25   the best incentive you're going to get

 1   manufacturers to change what's offered in the

 2   marketplace.

 3   You know, but, hey, I'll save millions

 4   of dollars in development costs, and we'll set up

 5   the bucket system so that I already populate that

 6   top bucket, and I don't have to improve anything.

 7   MR. ROBINSON: There's no incentive.

 8   MR. WISCHHUSEN: Yeah, exactly.

 9   MR. TUVELL: I appreciate the points,

10   and you make it sound so black and white. It's,

11   gee, it's that or that, and that's all. When, in

12   fact, there's many variations in between, Mike.

13   And I wish that you would open your mind to say,

14   wait, there are different variations, doesn't have

15   to be simply one way or the other.

16   And that's what we're trying to get out

17   here, is the opportunity for people to consider

18   and explore and understand that there are various

19   ways of doing this that could possibly achieve all

20   of these objectives, including the one.

21   And believe me, I will tell you, that

22   one of my key objectives in any system I come up

23   with is something that's going to create

24   competition among the manufacturers.

25   It will happen. It will happen. But

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1   there's various ways to get that to happen.

2   MR. ROBINSON: Well, let's proceed here.

3   We have some additional information which may, I

4   think, clarify and add some credence to what the

5   consumer actually could use, which is miles per

6   gallon -- actual gallons of gas saved.

7   DR. WADDELL: Walt Waddell, I have a

8   question based on your proposed five star rating

9   system. Looks to me like your system is actually

10   even more liberal than the European system because

11   your max RRC at 7.5 encompass two of their bands

12   or classes, is that correct?

13   MR. ROBINSON: Possibly, yeah. Well,

14   the European system bands, some of those are

15   hypothetical, which cannot be filled yet. Those

16   are for future expansion.

17   DR. WADDELL: But we just saw that with

18   the 195 tire.

19   MR. ROBINSON: Right.

20   (Parties speaking simultaneously.)

21   DR. WADDELL: No, no, I understand that.

22   There's no band D --

23   MR. TUVELL: Come to the mic if you need

24   to talk.

25   DR. WADDELL: But what happens is I'm

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1        saying the European system has a 6.5 class A, and

2        then a 6.6 to 7.7 class B.  You're throwing all

3        the A and Bs and giving them five stars.  You

4        could have given the 6.5s the five stars, and then

5        greater than 12, no stars.

6                MR. ROBINSON:  Can you scroll back to

7        our -- go to the previous slide, please.  The one

8        that shows the Bell-shaped curve.  There we go.

9        Okay.

10               What's your point, Walter?  You're

11       saying we could have slid this down or slid it up?

12               DR. WADDELL:  Well, if you're wanting a

13       universal type system, Europe's got six

14       categories.  I understand one of them --

15               MR. ROBINSON:  I'm not hearing --

16               DR. WADDELL:  -- is not filled.

17               MR. ROBINSON:  Are we hearing we want a

18       universal type system?

19               DR. WADDELL:  No.  I'm just questioning

20       what it is we're proposing.  We're proposing here

21       to combine Europe A and B into five stars.  Yes?

22               MR. ROBINSON:  Sorry, we're what?

23               DR. WADDELL:  The proposal here is this

24       1 percent in the five star --

25               MR. ROBINSON:  Correct.
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1   DR. WADDELL: -- is European bands A and

2   B combined.

3   MR. ROBINSON: That's possible. I'd

4   have to take a look at it, but, yeah, sounds like

5   it.

6   DR. WADDELL: Okay, thank you.

7   MR. ROBINSON: Okay. This one. Great.

8   A lot of good dialogue.

9   The next item is again, taking a subset

10   of 1007 datapoints, the 265/70R17, 65 tests in

11   this case. And for the most part a pretty good

12   choice for all those different type tires.

13   Now, the one star rated system you don't

14   have some H speed rated tires in there, but,

15   again, this would open it up to competition, could

16   potentially, if there was a demand in the

17   marketplace, fill that category.

18   Next slide, please. So the question,

19   how do we provide additional information related

20   to safety and durability so the consumer will

21   understand the potential tradeoffs when it comes

22   to a fuel efficiency rating system.

23   We're not just trying to sell a tire

24   based upon fuel efficiency. We also have to

25   consider safety. So consumer information:

1   components, tire efficiency, rolling resistance,

2   also safety, which we are going to advocate using

3   wet traction from UTQG, and durability tread wear

4   from UTQG.

5   Next slide, please. Can you slide that

6   over a little bit? Looks like we're truncated

7   some of it.

8   (Pause.)

9   MR. ROBINSON: That's okay, we can go

10   back -- I think what I need is on there. Okay,

11   this is a trend analysis we did on all the

12   datapoints that we collected, the 1007 datapoints,

13   comparing looking at the RMA five star rated

14   system and looking at the number of stars within a

15   given speed category. And also looking at four of

16   those star ratings, the comparable tread wear

17   range and the UTQG traction range.

18   So you can see the trends are, as you go

19   up in speed rating your choices in average fuel

20   efficiency ratings, from a star rating based

21   system, decrease. Also your tread wear ratings

22   typically decrease, as well. But your traction

23   ratings increase.

24   So hypothetically let's just take a look

25   at an H rated tire. I can say, okay, I want a

1   five star rated tire for fuel efficiency. But

2   based upon what we see now in the marketplace that

3   would require an A traction grade. So you would

4   not be able to get a AA traction grade five star

5   rated tire. So this is going to provoke

6   competition within the marketplace.

7   Next. So integrating safety and

8   durability consumer information we'd like to use

9   traction as a surrogate for safety and tread wear

10   as a surrogate for durability. And use UTQG in

11   combination with fuel efficiency information at

12   point of sale.

13   Next, please. This is an RMA concept.

14   It's one method that could be used. You convey

15   all this information so that the consumer can make

16   an informed choice. Hypothetical tire, but tire

17   fuel efficiency rating, stars, one, two, three,

18   four, five. This could be letter grades, could be

19   fuel pumps, whatever.

20   But it shows the relationship of the

21   fuel efficiency rating system in combination with

22   the UTQG traction grade, in combination with the

23   UTQG tread wear grade. All the information would

24   be available so the consumer could make an

25   informed choice, looking at both safety,

1   durability and fuel efficiency.

2   Next, please. So, how do we tie all

3   this in to the consumer so that they can

4   understand, okay, I got a four star versus a three

5   star. What's that really mean to me in the

6   marketplace.

7   What we could do, this is an RMA concept

8   on how to communicate potential fuel savings to

9   consumers. You could give them point-of-sale

10   information stating that, and of course this has

11   to be worked out to make sure that it's accurate.

12   We're fairly sure that it looks pretty good, but

13   we need to confirm that.

14   But going from a one star to a two star

15   system, got a new tire, it's a one star, and a new

16   tire that's a two star. What does that really

17   mean to me for my specific vehicle for estimated

18   annual fuel savings.

19   Well, if we look at the hybrid going

20   from a one star to a two star, that saves me about

21   six gallons of gasoline per year. This is a way

22   to tie it into the star rating system and to

23   convey to consumers how much fuel savings they'll

24   have per year.

25   Next, please. So will consumer

1   information stimulate manufacturer competition and

2   innovation. And our answer is yes. The federal

3   UTQG program illustrates how the availability of

4   consumer information stimulates competition and

5   product improvement.

6   Mike will mention in a minute here that

7   UTQG traction grade, we used to have A, B, C. But

8   through the progression of technology and the

9   improvement of tires over time, all the tires

10   started to cluster around an A traction grade.

11   So then we expanded that to have a AA. So

12   that's how technology works, and how competition

13   forces improvement.

14   Next, please.

15   MR. TONACHEL: Sorry to interrupt. Luke

16   Tonachel from NRDC. Back in your table you give

17   the example of going from a one star to a -- I

18   guess one to a two star, and the gallons saved.

19   Is it all additive? If I went from a two to a

20   five?

21   MR. ROBINSON: Yes, yes, it's additive.

22   Of course, those details all have to be confirmed

23   to get exact numbers. But this is, in concept

24   they would be additive.

25   Okay, so summary. Rolling resistance

1   coefficient should be used as a rating system

2   basis as opposed to rolling resistance force.

3   We feel it provides consumers with

4   accurate fuel efficiency information and direction

5   for their vehicle, particularly when it comes to

6   upsizing or changing tire sizes.

7   The ISO 28580 procedure is based upon

8   rolling resistance coefficient for lab alignment;

9   and as Dan mentioned, data quality requirements.

10   The ISO 28580 procedure should be used

11   as a test basis to rate tires for fuel efficiency

12   primarily because it includes provisions for lab

13   alignment -- be reporting numbers that are aligned

14   numbers where you can compare lab A to lab B for

15   the same tire.

16   A five star rating system is recommended

17   with 1.5 kilogram/ton bin widths as supported by

18   the ISO 28580 task group alignment uncertainty

19   values based upon measurement resolution of the

20   best worldwide labs.

21   Now, this is based upon uncertainty. As

22   Dan mentioned already, the risk associated as you

23   approach the bin limits.

24   We also recommend using UTQG and tire

25   fuel efficiency rating together as consumer

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1    information at point of sale.  We can't forget the

2    safety aspects of consumer information.

3              And then last but not least, the star

4    rating system could be linked to information

5    providing consumers with average expected fuel

6    savings per year.

7              Next slide, please.  And that's all I

8    have.  So, question?

9              MR. TUVELL:  Thank you very much, Tim.

10   Ray Tuvell with the Energy Commission.  First off

11   I would like to mention one thing.  I have a copy

12   of the Bridgestone real questions/real answers,

13   tires and truck, fuel economy, a new perspective.

14             I don't know if any of you folks get

15   into the publications or have a chance to take a

16   look at this.  Outstanding piece of work.

17             At some point down the road when we go

18   out to consumers and try to educate them on the

19   subject of fuel efficiency for passenger tires, I

20   want you and Bridgestone to be a part of the team

21   that helps us do it.

22             MR. ROBINSON:  Oh, sure.

23             MR. TUVELL:  I mean if -- you could take

24   this same stuff that you have done for trucks and

25   help translate it into the subject of passenger
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1    tires.  And I know you can, because you've

2    obviously got the knowledge and you know how to

3    get the message across.

4              We'd love to be able to work with you on

5    that.  This is an outstanding piece of work.

6              MR. ROBINSON:  Thank you.

7              MR. TUVELL:  Your third point in

8    particular, Tim, we talked about it earlier.  I

9    would really love to see the citation of the 1.5

10   kilogram/ton bin width tied to the ISO 28580 task

11   group.

12             If you can show me a task group report

13   or something where they say that, and they reach

14   that conclusion, I would love to be able to see

15   it.  Because I can't find that kind of stuff.

16   Okay.  I can't find it.

17             MR. ROBINSON:  Ray, it's not in there.

18   The ISO 28580 task group submission was not to

19   recommend bin widths.  But what they did provide

20   was, to put it in layman's terms, you know, the

21   resolution on our measuring stick, and how

22   accurate that is, such that looking at uncertainty

23   and the risk associated with being close to the

24   edges of the bin, what they would recommend.

25   Which would be, I think, 1.39 as a minimum.
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1   And we've taken the 1.5 as a good round

2   number -- and part of it is based upon the EU

3   proposal -- for setting up our bin widths.

4   Can you go back, please, to the Bell

5   shaped curve. There's one more point I want to

6   make. And this gets down to this point right

7   here.

8   These bin widths are approximately about

9   10 percent apart on average, maybe a little bit

10   more than that. But a 10 percent change in fuel

11   efficiency is equal to about a 1 to 2 percent --

12   I'm sorry, a 10 percent change in rolling

13   resistance is equal to about a 1 to 2 percent

14   change in fuel efficiency.

15   So going from a two star to a three star

16   tire, and I get 25 miles per gallon, I get 10

17   percent improvement, my miles per gallon is going

18   to go, instead of 25, it's going to go to 25.25.

19   So that's very very difficult for the end user to

20   observe.

21   MR. TUVELL: Okay, now --

22   MR. ROBINSON: So it doesn't make a lot

23   of sense to make these much tighter.

24   MR. TUVELL: No, I understand. But I

25   mean this whole bin system and the justification

    1   for it, and how it's tied back to 28580, I can't

    2   retrace those steps. Yet I've seen that time and

    3   time again in the presentations today. And that's

    4   why I'm restating this problem. So, you know, so

    5   there's no question in anybody's mind about it.

    6   But while you're on this chart, in a

    7   number of presentations today there have been

    8   charts that have been reference to the RMA dataset

    9   of 200-plus combinations of tire sizes, and I

   10   think that's what this is here, too.

   11   Until we're able to get our hands on

   12   that dataset to independently analyze it, we're

   13   not in a position to be able to look at something

   14   like this and say we agree or not. Okay.

   15   So I want to restate this over and over

   16   again. The extent to which you're using datasets

   17   that we don't have the ability to independently

   18   analyze, good for you, but how do you expect me to

   19   do anything with it. Okay.

   20   MR. GUINEY: Dan Guiney, Yokohama. Let

   21   me try to do my best to help with the ISO versus

   22   the calculation of categorical widths.

   23   The best way to describe that is there

   24   are available statistical methods that have

   25   nothing to do with ISO. They are just basic

1   statistics that any statistician -- I'm not one,

2   I'm a layman, I understand a good bit of it, but

3   they could come and present to you the exact same

4   terminology, just statistically, how all that's

5   derived.

6   The ISO group did use methodologies that

7   are common statistics to resolve categorical

8   widths as a judgment for different alignment

9   methods. It's all statistics that's available to

10   anyone.

11   So, probably what would be appropriate

12   is a future discussion and a future review of the

13   statistical methods to judge the categorical

14   widths. And it really doesn't have any unique

15   applicability to ISO. It was just normal

16   statistical methods that were used to judge

17   alignment methods.

18   MR. TUVELL: Ray Tuvell with the Energy

19   Commission. Dan, I appreciate the offer and I'll

20   take you up on it.

21   I actually need two things to help me

22   with this subject area. One is more in-depth and

23   inside information on what happened with ISO and

24   that committee, and what they actually concluded.

25   Because there's been a breakdown in

         1   information getting to us on that. We're getting

         2   it now through filtered sources that suggest to us

         3   that it is not the direct information that was

         4   developed then. And it concerns us a lot.

         5   And then so I'd love to get a more in-

         6   depth understanding of what's happening there.

         7   Plus some of the subjects that you

         8   didn't mention today on, at least in depth, on

         9   28580. Who's going to be running the reference

        10   lab? When? When are they starting up? When are

        11   we going to start seeing some of these tires

        12   available for other candidate labs to be

        13   calibrated against the reference lab? Who's

        14   setting up the administrative mechanism for that?

        15   So that I will know whether or not this lab has

        16   been calibrated against the reference machine.

        17   How's that all being handled? Who's

        18   responsible for making sure that it gets underway

        19   and gets handled?

        20   I mean I have my list of questions on

        21   what's going on with ISO and the test protocol

        22   that's endless right now. And we dearly need

        23   somebody to step forward who can give us the

        24   objective straightforward picture on what's going

        25   on there. Because it's of significant importance.

1   So, really, it's that aspect of ISO

2   28580 that's more important to me than what do you

3   do statistically and how you can do different

4   analyses.

5   MR. MEIER: It's Alan Meier. And I had

6   one question about consistency with the European

7   approach. And the last time I heard about the

8   European approach they actually had a couple bands

9   at the bottom that were only 1 kilogram/ton wide.

10   Is that accurate?

11   MR. ROBINSON: I'm not sure if they were

12   1, they may be 1.25. We have to go back and look

13   at the EU proposal, but most of them in the range

14   that we're in are same band widths, 1.5

15   kilogram/ton.

16   I believe they had some that were a

17   little lower, they were 1.25.

18   MR. WISCHHUSEN: Yeah, we have to

19   realize the European system is not finalized.

20   MR. ROBINSON: Right, --

21   MR. WISCHHUSEN: I mean it's a proposal

22   at this point.

23   MR. ROBINSON: -- it's hypothetical.

24   MR. MEIER: So, are you going to propose

25   a different, make a change in these to keep them

1   harmonized with the Europeans?

2   MR. ROBINSON: That's not our proposal

3   right now. No, this is our proposal.

4   Okay, any other questions? Okay, thank

5   you.

6   MR. TUVELL: Take a break? For those of

7   you on the internet, we're going to take a five-

8   minute break.

9   (Brief recess.)

10   MR. TUVELL: Folks on the internet,

11   we're going to reconvene now with the last

12   presentation, Mike Wischhusen of Michelin.

13   MR. WISCHHUSEN: Okay, good afternoon,

14   everybody. I'm very happy to tell you I'm the

15   last scheduled speaker today. Okay.

16   I want to talk a little bit about the

17   testing and compliance. And, you know, I brought

18   this point up this morning. Always like to

19   periodically go back and remember why we're here,

20   you know. We're here to talk about AB-844.

21   And you know, what AB-844 requires is,

22   you know, to select a test methodology; and then

23   based on that methodology, develop a rating

24   system. And then provide or facilitate the

25   reporting of data on tire performance, okay.

 1   That's why we're here.

 2   Now, next slide. At the last meeting,

 3   Smithers, I believe it was Smithers, presented

 4   some information on the total number of SKUs in

 5   the marketplace. It's close. That's a pretty

 6   good number. I mean when we look at what each of

 7   us have in our own portfolios, their totals are

 8   pretty good.

 9   Remember SKU is stock keeping unit. I

10   mean that's not a term, you know, unique to the

11   tire industry, but basically that's, I want a

12   195/65-98H MXV4. Okay. That's a SKU. That's

13   what you go and buy. It's the part number.

14   Now we got to remember any count of SKUs

15   in the marketplace is simply a snapshot in time,

16   because that number changes constantly. We're

17   always adding SKUs to the market; we're always

18   removing SKUs from the market.

19   Now, hopefully, in a well balanced

20   system, you're removing just about as many as you

21   are adding at any given time.

22   For us, at this point in time, about 10

23   percent of the SKU count is renewed every year.

24   Just, you know, rough figures. Now, don't make

25   the extrapolation that that says an average SKU

1   life is ten years. That's not quite true, because

2   not all tires, not all classes and sizes of tires

3   are renewed at the same rate.

4   The ultra high performance stuff tends

5   to be renewed on a much shorter cycle. Snow tires

6   tend to be renewed on a much shorter cycle. Some

7   of the mass market broad line tires have a long

8   luxurious life. So it's a bit of a stretch to say

9   average SKU life is ten years. But, on average,

10   10 percent of the total SKU count gets replaced

11   every year. Okay, so that's a pretty good number.

12   Now, let's go to the next slide. Just,

13   you know, philosophically, the testing that we do

14   as manufacturers historically has been centered

15   around endurance traction and tread wear. Okay,

16   those are the ones we do the largest quantity of

17   testing on.

18   And interestingly, you know, those are

19   the three things that always show up at the top of

20   the market surveys, you know, what are consumers

21   after when they're looking for tires.

22   Now, if we start doing a lot more

23   rolling resistance testing it's going to require

24   some significant investment on the part of the

25   industry. I mean that's, I don't think, a

1   surprise to anybody.

2   The industry understands that. We

3   accept it. We're happy to do it, but we just want

4   to try to do it in the most economical and most

5   beneficial way.

6   Okay, next slide. The question of

7   current tire capacity came up, and I will tell

8   you, that is a thorny question. That is not an

9   easy question to answer. It's not as simple as

10   counting excess machines. I mean I think you can

11   go through any one of our facilities, you won't

12   find excess machines. I mean we don't buy test

13   equipment and let it sit idle. I mean that's a

14   very poor investment on our part.

15   You've also got to realize the machines

16   that are used for rolling resistance testing can

17   be used for other things. So, if we're not

18   running a rolling resistance test on Tuesday

19   afternoon, that doesn't mean that machine is idle.

20   It may be doing another test. Okay.

21   You've also got to realize it's not only

22   test machine capacity, it's the availability of

23   operators to run those tests. Okay. So you can

24   have the machine, but you don't have an operator,

25   and you can't run any more tests. So you've got

1   to look at both of those things.

2   So, now each company, there's no

3   standard model for how we equip, account for and

4   staff our testing facilities. Everyone of us does

5   it differently. So to try to throw us all into

6   one model is a little bit difficult.

7   So, the concept of excess capacity can

8   be challenging. And trust me, it's very

9   challenging.

10   If we go to the next slide, we tried

11   looking at it a different way, okay. We kind of

12   reversed the question. Rather than saying how

13   much capacity do you have, and how fast could you

14   test all these tires, we turned it around and

15   said, if we had a time target to do all this

16   testing what would we have to do to our capacity

17   to meet that time, okay.

18   Now, if you look at current, you know,

19   today capacity in terms of machines, and labor to

20   run them, and in the hypothetical situation that

21   we had to test multiple replicates of every SKU we

22   make, which was in the vicinity of 24,000 there,

23   it's going to take decades to do that. You know,

24   given the current capacity.

25   And that goes back to my slide a minute

1   ago, if we're going to do that much testing we

2   have to make some investment, okay.

3   So, you know, we did an exercise to look

4   at that investment. Go to the next machine.

5   Let's look at the assumptions on the right first,

6   okay. We assume we're going to test every SKU,

7   three replicates of every SKU. We are not

8   counting the additional ongoing compliance testing

9   or quality control testing that we would have to

10   do on top of it. We're only looking at the

11   initial count of tests.

12   Three-year implementation period, again.

13   I mean that's a number that's picked out of the

14   air, but in the regulatory world, the three-year

15   implementation timeline is not uncommon.

16   So, now we say, okay, the existing

17   machines we have, add the necessary labor to take

18   those machines to 100 percent utilization, all

19   right. And then add additional machines and

20   additional staffing to finish the rest of the job.

21   Again, you know, Smithers reporting,

22   they're looking at the machine availability

23   question. Said it's probably about 18 months, you

24   know, to order a machine, get it installed and

25   start using it. Again, that's probably a good

1   estimate.

2   So, what that says, though, is if we

3   start today and order machines today, I'm not

4   testing until 18 months from today. So that cuts

5   in half my three-year implementation time. So I

6   now have actually 18 months to do this testing,

7   not 36 months to do this testing.

8   And you've got all the other costs. I'm

9   not sure in the previous estimates, you know, they

10   thought of things like HVAC costs, electricity

11   costs and all that stuff. But there are operating

12   costs for these machines. I mean they're all

13   electrically driven.

14   And the other thing, we're not going to

15   design and build a tire in South Carolina and test

16   it -- and send it to France to be tested, okay.

17   Other companies are not going to design and build

18   a tire in Tennessee and send it to Japan to be

19   tested, okay.

20   The testing capacity exists and the

21   testing capacity that's available is the testing

22   capacity that is where you operate, okay. So the

23   global testing capacity is really not valid.

24   You've got to look at the usable, accessible test

25   capacity.

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1                    Okay, so if we do that, with all those

2         assumptions, we're going to buy a certain number

3         of machines to the tune of about $7.5 million,

4         okay.  And that's almost 6 million of test

5         machine, itself.  But then you can't just put this

6         test machine on a bare floor you know, outside the

7         front door of the test building.  I mean it's got

8         to be in a proper environment.  So there are some

9         test cell costs that go along with it.

10                   Don't forget, if we're going to be

11        testing three times 24,000 tires, that's 75,000

12        tires.  Those tires cost money.  And after you

13        test them you can't sell them, you have to dispose

14        of them.  They're a disposal cost.  I mean so

15        there are tire costs to this idea of testing.

16                   All those costs, those aren't annual

17        costs, they're capital investments, a one-time

18        cost.  But, you know, look at things like waiver.

19        This is the additional people.  And we're going to

20        a 24/7 shift cycle, you know.  How many people

21        would we have to hire to run these machines 24/7.

22                   You've got energy costs; you've got

23        maintenance costs.  I mean these are complex

24        machines, they break, the need preventative

25        maintenance, okay.  So there's a cost associated
```

1   with that.

2   Total that all up, you're looking north

3   of $21 million to do that. And, again, heavily

4   driven by that three-year assumption.

5   Okay, let's go to the next slide. Now,

6   that brings us the question, all that analysis was

7   done on the presumption that we've got three

8   triplicates of every tire. Okay.

9   Is there another way to do this? Yeah,

10   we think there is. And that would be to develop

11   an efficiency rating system comprised of self-

12   certification plus some sort of an audit system.

13   You know, if we do it like the federal government

14   does it, it's self-certification with an audit.

15   We know they're auditing us, okay. That's kind of

16   an incentive not to cheat.

17   You can also do it, rather than a

18   government audit, you can do a stakeholder

19   challenge, okay. I don't believe Dan, you know, I

20   want you guys to check Dan, so actually I will

21   check Dan's tire, okay.

22   But there are ways to do this, okay. So

23   don't think that self-certification is carte

24   blanche for manufacturers to cheat. I mean say

25   certification works. I mean NHTSA uses and trusts

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1   self-certification with the federal motor vehicle

2   safety standards, okay. These are the safety

3   standards that govern the safety of motor vehicles

4   and tires. That's the self-certification system.

5   Okay, let's go to the next slide. The

6   first option we had, which was do all the testing

7   and submit all the data. It would require tire

8   manufacturers to submit test data on every tire

9   sold in California. I mean that's what AB-844

10   says.

11   Now, be realistic. Okay. We don't make

12   unique tires for the state of California, okay.

13   So what that requirement's going to do, we're

14   going to have to test every tire we build, you

15   know, regardless of where it's sold in the United

16   States. I mean that's reality.

17   I mentioned it before, we're not only

18   talking about the initial testing, but we've also,

19   depending upon the quality system that each one of

20   us uses, and each one of us uses a different

21   quality system, but we're going to have to do

22   periodic rechecks.

23   Okay, so in addition to that 75,000 test

24   slug you've got to digest, annually, you're going

25   to be doing more testing, which is the 10 percent

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1    of the new SKUs that come into the market, and

2    however many additional tests you're doing, you

3    know, just to verify that you're still where you

4    think you are.

5             Okay.  All right.  Now, in our

6    estimation that data submission option, you know,

7    this idea of massive amounts of testing is

8    probably the highest cost and the longest

9    implementation time of the possible solutions.

10            You know, you've got capital investments

11   on the manufacturers part, and the operating

12   expenses.  Whatever organization is receiving this

13   data has got to invest in the expertise so they

14   understand what the data is, and they know what

15   they want to do with it, and they do whatever it

16   is they want to do with it.  So there's a cost;

17   there's a cost there to the presumed regulatory

18   agency.

19            It's come up a couple of times, there's

20   a larger investment both for the regulator and for

21   the manufacturer, I believe it was Dan's point;

22   and for Consumers Union on consumer education.  I

23   mean this stuff is not intuitively obvious, okay.

24   I mean if there's one conclusion we can draw from

25   however many years we've been working on this,
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1   this stuff's not intuitively obvious, okay.

2   And we can't expect consumers to

3   immediately grasp concepts like rolling resistance

4   force, rolling resistance coefficient and things

5   like that. So there's going to have to be a lot

6   of education that goes along with it, and that's

7   not free.

8   All right, next slide. All right, now

9   let's look at the other way, the concept of self-

10   certification. As I said, that is the bible for

11   U.S. federal laws, U.S. federal regulation, self-

12   certification. I mean we know it in the motor

13   vehicle industry, I mean that's the way it goes.

14   The burden is solely on the manufacturer

15   to insure compliance with federal safety and

16   consumer information regulations, okay. It's used

17   for UTQG, it's used for the federal motor vehicle

18   safety standards.

19   It does not specify the means to comply,

20   okay. It doesn't say you must do this to assure

21   yourself that you comply. It simply says you must

22   assure yourself that it complies. And when we

23   audit you it had better comply. And if we audit

24   you, here's what we will do. Okay, so that test

25   procedure for the audit process is known to us,

1   okay.

2   So we have the ability to say whatever

3   method we choose is validated by the audit test

4   procedure. Okay.

5   Next slide. Now, again, it's not only

6   we have to prove to ourself once that it passes

7   the test, we have to continue to assure ourselves

8   that things haven't changed, something hasn't

9   happened that means it isn't going to pass again.

10   So, again, whatever quality system we have in

11   place -- and that's our choosing; I mean that's

12   not specified by the regulation -- we're going to

13   do more testing based on that.

14   Okay, next slide. All right, now why

15   does self-certification work. There are

16   significant penalties for noncompliance, all

17   right. I mean if we screw up we know there's

18   fines for not complying, okay. If we get caught

19   not complying we pay a hefty fine. Okay, that's a

20   big deterrent.

21   Also, the consequences of noncompliance,

22   you know, in addition to the cost, that's a damage

23   to our company's reputation, okay. And in the

24   business world when we're selling products to

25   consumers our reputation is the most important

1   thing. Flat out, okay.

2   If your consumers, if the purchasers of

3   your product don't trust you, they will not buy

4   your product, okay. We guard that very zealously.

5   And there's the periodic government

6   auditing. I mean that's the way we work with

7   NHTSA. They periodically audit. Doesn't have to

8   be a government audit, it could be some sort of

9   stakeholder challenge system. It's going to work

10   the same way.

11   Okay, next slide. Now, what are the

12   benefits of a self-certification system? It

13   minimizes the government bureaucracy that you need

14   to put in place to manage a system. It doesn't

15   eliminate it. It reduces it. Maybe minimize is

16   too strong, it reduces the bureaucracy that's

17   needed to ride herd on another type of system.

18   It give us, the companies, the

19   flexibility to design a compliance program to meet

20   those needs. And I'll tell you, flexibility

21   equals reduced costs, okay.

22   When a procedure is dictated it's

23   expensive. If the guidelines are dictated, if you

24   have the flexibility each one of us is going to

25   choose a slightly different path, which reduces

1   our costs the most. But still gets the end

2   result.

3   And we'll use a variety, you know, a

4   combination of methods to insure compliance,

5   testing, I mean testing is the most

6   straightforward. You throw it on the machine and

7   you see what it does.

8   We've got some pretty sophisticated

9   computer models, okay. And we can predict very

10   very closely a number of performances of a tire,

11   okay.

12   Now, testing and computer modeling are

13   not mutually exclusive. Based on what you see in

14   the testing you develop the theory that lets you

15   develop the model. Then you run the model and you

16   go back and you check the model. You validate the

17   model with testing. So it's a combination there.

18   But long term, once that model is

19   developed, you can significantly reduce the number

20   of tests, all right. And there, again, that's the

21   benefit to the manufacturers of not over-

22   specifying, okay. So it's, you know, self-

23   certification if a good point there.

24   You know, quality control in the

25   manufacturing process, some companies will pick

 1   random tires off the line and test them. You

 2   know, some companies will use predictive modeling.

 3   Some companies will use architectural measurement

 4   controls. There's many different ways to assure

 5   that compliance.

 6   And, again, we do things we're not going

 7   to tell you about. I don't want these guys, you

 8   know, to hear what we do. I mean and there is,

 9   accept it, guys, there's a lot of trade secret in

10   this business. Okay. A lot of proprietary

11   information.

12   So every once in awhile you're going to

13   ask something and we're going to smile and say, I

14   can't answer you.

15   Okay. Next slide. Now, let's look, you

16   know, Jim made a proposal for a self-certification

17   based energy efficiency rating system, okay. So

18   now let's go take self-certification, which the

19   last couple slides been talking about. Now let's

20   take self-certification together with a proposal

21   for an efficiency rating system.

22   Again, from our perspective, the most

23   cost effective means to assure compliance, and

24   that's cost effective for the industry, and it's

25   cost effective for whoever is going to be

     1   monitoring the compliance with the regulation.

     2   Self-certification is not without cost.

     3   It's not free, okay. But it's a lower cost than

     4   this mandated you must test everything.

     5   Most importantly, it accelerates the

     6   environmental benefits by compressing the

     7   implementation time, okay. If we've got to

     8   purchase, install and test every SKU, you know,

     9   we're, like I said, I mean we're out here three

    10   years from now, okay.

    11   If we can do this based on a self-

    12   certification system, you're going to cut that

    13   implementation time, you know, I can't give you an

    14   exact number, but you're going to cut it by 30

    15   percent, you're going to cut it by 50 percent.

    16   You're going to get faster; you're going to be

    17   able to implement faster. Consumers are going to

    18   benefit faster. And society benefits faster.

    19   And remember, that's what we're here

    20   for, is the consumer benefit and the societal

    21   benefit. And this is going to get us there

    22   faster.

    23   Okay, next slide. Pretty much what I've

    24   said, you know. If we're not required to test

    25   every SKU we'll do a lot of statistical modeling

1   and sampling techniques, which reduces the cost

2   requirements.

3   The test demand is reduced to a level

4   manageable probably with awfully close to our

5   existing machine capacity, okay. Not our labor

6   capacity, but our existing machine capacity. So

7   the industry can dramatically reduce that $21

8   million figure. And what was it, 7 or 8 million

9   of that was equipment cost. We could

10   significantly reduce that if we can manage and

11   reduce the amount of mandatory testing.

12   And we can get to the point of assigning

13   grades to tires without suffering this lead time,

14   the delay of the lead time, to do all the testing,

15   all right.

16   Next slide. We tried to put some

17   numbers on this, okay. I mean this is not

18   precise, okay, but we're looking.

19   Again, let's look at the assumptions.

20   RMA can only talk of RMA members. Okay, there's

21   eight RMA member companies. The nonRMA member

22   companies haven't participated in this, so we

23   can't say anything about them.

24   Even self-certification still encounters

25   the costs associated with testing and rating

         1   tires. There's some testing that's going to be

         2   done, all right. The rating system addresses

         3   existing SKUs, okay. We don't necessarily have to

         4   go back and test every one.

         5   Again, assuming probably within 24

         6   months we can do the necessary testing that we

         7   have to do, all right. Again, it's an assumption,

         8   it's an assumption.

         9   We think we'll end up testing about 20

        10   percent of the SKUs, okay. Because when tire

        11   lines are developed, you may have 20 different

        12   sizes in a tire line. If you test every fourth or

        13   every fifth one through the size range, you can

        14   extrapolate what the ones in the middle will be.

        15   And that's the significant reduction in test

        16   capacity, is operating on that sort of statistical

        17   methodology.

        18   We think we can do this with no new

        19   equipment purchase, or at least a minimal

        20   equipment purchase. All right. And there are a

        21   couple companies, I mean, that are within RMA that

        22   do not have the existing test capacity to do this.

        23   They're going to have to make a choice. They're

        24   either going to invest in that machine capacity or

        25   they're going to go to a third-party source for

 1   the testing. All right. But, again, that's their

 2   choice.

 3   All right, next slide. If you just, you

 4   know, kind of summarize the benefits of the self-

 5   certified energy efficiency rating system, now we

 6   were looking at in excess of $20 million for the

 7   full fledged test everything. Compared to about

 8   1.5, a little over 1.5 million for the self-

 9   certification based system.

10   If we have to test everything we're

11   looking at three years to collect the data before

12   you start developing the rating system.

13   We said here 24 months. I mean if we

14   can do the self-certification bucket type system

15   that Tim talked about, we'd probably have it

16   rolling in about 24 months. Again, I mean, that's

17   not a commitment. It's an honest estimate of

18   where we think we can go.

19   Look, I mean face it, the complexity,

20   the questions we have faced today and in every one

21   of these workshops we've had, this is complex

22   stuff, okay. Somebody has got to understand it.

23   And I think for the regulatory agency that's going

24   to be managing this thing, it's going to be

25   incumbent upon them to have that expertise. And I

1   suspect there's a cost involved with acquiring or

2   developing that expertise.

3   If we don't have that massive data to

4   manage, I think you can get away without the

5   expertise. Or at least a lower cost expertise.

6   All right.

7   Okay, next slide. Now, this is the one

8   we talked about. You know, I think self-

9   certification gets a bad rap partly because it

10   gets associated with UTQG, and UTQG gets a bad

11   rap. Some of it deserved, some of it not

12   deserved.

13   But let's specifically look at a case of

14   UTQG traction. When the UTQG traction system was

15   created 30 years ago, roughly, the boundary levels

16   of the different letter grades, A, B, C, were

17   decided to evenly distribute the then-current

18   population of tires amongst those three grades.

19   Fast forward 20 years, all of a sudden

20   everything was crowded up in the As. Very very

21   few Cs, only a couple more Bs, everything was in

22   the A. You had this mass population and you knew

23   they weren't all equal, but they were all rated A

24   because that's what the boundary was.

25   So, NHTSA actually took the step of

1   creating a higher bucket. And if you look today

2   you've got a huge population in the AA, good

3   population in the A, and Bs and Cs are dropping in

4   population.

5   So, I mean, that sort of a bucket

6   system, I'll call it a bucket system -- that sort

7   of a bucket system does work at affecting consumer

8   behavior and affecting manufacturer -- call it

9   manufacturer priorities or development priorities.

10   Okay.

11   You look at that UTQG traction case and

12   that's what it tell us. Now, when I asked Gene a

13   question, the rap, I think the valid rap for some

14   of the UTQG tests is that the regulation requires

15   the tire must perform at least at the indicated

16   level.

17   What that does is allow the manufacturer

18   to effectively derate a product for whatever

19   reason. But that's a very simple solution. Don't

20   make it a minimum rate. Simply, the tire must be

21   marked with the grade that it achieves. Plain and

22   simple.

23   It's not a fault of a self-certification

24   system. It's a fault in how the regulation is

25   written, and there's a very simple solution to

1   that. So we can avoid repeating that error.

2   Okay. And again, the conclusion, you

3   know, manufacturers change their product offering

4   and consumers change their purchase behavior.

5   That's what we're trying to do.

6   All right, next slide. So, in summary,

7   you know, the RMA, Tim said it, I'll say it, we

8   support a self-certified tire energy efficiency

9   rating system, okay.

10   We're going to get to where we want to

11   be faster. And we're going to reduce the industry

12   costs; and trust me, you know, you know how the

13   auto companies are faring in the economic

14   situation today. All right, we're not a whole lot

15   different than the auto companies.

16   And this is -- in Goodyear this is a

17   low-margin business. Scraping up $21 million of

18   investment is not going to be easy.

19   And, you know, I've labeled the industry

20   capital expense, again, I think there is a reduced

21   expense on the management side of a program like

22   that, too.

23   Now we just talked about the concerns

24   about the derating of UTQG grades is not a fault

25   of self-certification. Regulations can be written

1   to prevent the possibility.

2   I think that's the last slide. No, wait

3   a minute, I'm sorry. Yes, it is. It's the last

4   slide.

5   All right, questions?

6   MR. TONACHEL: Mike, this is Luke

7   Tonachel from NRDC. I just wondered if you could

8   comment on what data you would expect to report

9   under your self-certification program.

10   And I guess where I'm going with this is

11   that you indicated the use of modeling tools for

12   some of your SKUs. It seems like even with the

13   modeling tools you'll come up with a value that

14   you'll stand behind in case you get audited as to

15   what that value of rolling resistance is for that

16   particular SKU.

17   Any reason why you couldn't provide that

18   value?

19   MR. WISCHHUSEN: I --

20   MS. NORBERG: I think he's asking the

21   datapoint versus the bucket reporting, if you're

22   modeling to a datapoint, I think, is the question.

23   MR. WISCHHUSEN: Our --

24   MR. TONACHEL: Do you want me to repeat

25   it?

1   MR. WISCHHUSEN: Yeah, could you repeat

2   it, please.

3   MR. TONACHEL: Yeah, sorry. The

4   question is you had indicated under your self-

5   certification -- now I'm getting feedback.

6   MS. NORBERG: Oh, sorry -- it's just

7   hard to hear you here, so I was trying to make it

8   more --

9   MR. TONACHEL: Oh, --

10   MS. NORBERG: Sorry about that.

11   MR. TONACHEL: I'll try to speak up a

12   little bit. You had indicated under a self-

13   certification program the -- you could utilize

14   some modeling techniques you could use to get to

15   some SKUs, maybe SKUs that are in the middle of a

16   whole range of SKUs.

17   And I was wondering about what you

18   thought of as your data reporting capabilities

19   under a self-certification program. And could you

20   provide sort of those modeling results for those

21   SKUs with the idea that, you know, you're open to

22   auditing and so you'd have to stand by some value

23   for any individual SKU.

24   MR. WISCHHUSEN: Yeah, yeah, you could

25   supply that number. Dan Guiney is going to offer

1   an answer here, too.

2   MR. GUINEY: Yeah. If you go back to

3   the presentation this morning, we would stand

4   behind the category with which that tire is

5   assigned to.

6   We would not necessarily be sharing any

7   data, nor would we be expected to be audited

8   against a numeric value. We would be standing

9   behind -- it is in that category that was approved

10   per the regulation issued.

11   MR. WISCHHUSEN: Right. And, again, I

12   mean that goes back to the uncertainties that are

13   introduced by the multi-lab situation.

14   You know, if it were my lab alone, yes,

15   we could do that. But for me to submit model

16   numbers and Dan to submit model numbers, you're

17   going to end up with the same concern about

18   uncertainty with multiple sources.

19   MR. TONACHEL: Well, I guess that's the

20   reason why we were delving into this whole

21   uncertainty question this morning, was to

22   understand that value a little better. It's not

23   my sense that coming out of today that we really

24   actually have a clear answer on that.

25   MR. GUINEY: Yeah. And you could, if

1   you ended up the regulation required a value, we

2   would be forced to say it's this plus or minus

3   something. Which ends up being, you know, a

4   number.

5   MR. TONACHEL: Well, there's still value

6   in that. You know, one of the things is that

7   you're going to have people outside of the tire

8   industry looking at the whole set of data and

9   getting a sense of what's happening in the

10   marketplace that there could be, you know, some

11   analysis of what's being sold and what kind of

12   benefits come from that.

13   And also, you know, -- you also have the

14   issue of products lining up on the, you know, sort

15   of in the -- function of the bin on the different,

16   where the thresholds occur.

17   I mean that's been seen with many

18   regulatory programs that operate in that way.

19   MR. WISCHHUSEN: Was there a question in

20   there?

21   MR. TONACHEL: Well, I was responding

22   just to the point of whether or not there's value

23   to providing a number.

24   MR. WISCHHUSEN: Okay, but, you know,

25   the uncertainty still exists around that number.

1   I mean it's the same uncertainty that exists about

2   a number at the border of a bin. I mean any

3   number, it still has that uncertainty associated

4   with it. And that uncertainty comes in the

5   largest part due to the fact that you're trying to

6   accommodate a system with basically an open-ended

7   number of data sources.

8   MR. TONACHEL: Yeah, I recognize that

9   there is some level of uncertainty. I'm not clear

10   on what that level is.

11   MR. WISCHHUSEN: All right. I think

12   earlier there had been a proposal, and I think an

13   acceptance of the proposal that to perhaps convene

14   another discussion specifically to talk about that

15   subject.

16   MR. TONACHEL: Okay.

17   MS. NORBERG: Mike, with your indulgence

18   and my apologies, I just want to -- on that self-

19   certification slide I just wanted to correct the

20   cost number that is listed for the self-

21   certification option. And this is my mea culpa

22   for -- in the room. I put the wrong number on the

23   spreadsheet. But if you were to look back at the

24   self-certification where we have the 1.6 or

25   something like that --

1   MR. WISCHHUSEN: The comparison?

2   MS. NORBERG: Yeah, it's -- there you

3   go. Yeah, about two slides on that one, and the

4   one before that you just saw. The number should

5   be 3.9 million. And I apologize. It just -- it

6   was my fault pulling the wrong number off of the

7   spreadsheet. So I just wanted to correct that for

8   the record, and for the materials that are posted

9   on the web, perhaps we can correct that so that we

10   get the right information available.

11   MR. WISCHHUSEN: All right.

12   MR. TUVELL: Ray Tuvell with the Energy

13   Commission. If it's okay with you, Mike, I'd like

14   to go back and just address it slide-by-slide. I

15   prefer to do that. I didn't want to interrupt you

16   as you went. So, if you can go back -- okay, so

17   from there go forward, please. Right there.

18   The machines are not standing idle; the

19   machines are used for testing. Each company

20   equips its staff, the excess capacity issue. And

21   then the next slide.

22   Given current equipment, staffing levels

23   and time, and you also made the issue of the

24   problem that you thought that we were grossly in

25   error in not associating location of machines and

1   tires and companies.

2   MR. WISCHHUSEN: Yeah, I think I said

3   it's more correct to assume that the local testing

4   capacity is what we have access to.

5   MR. TUVELL: Right.

6   MR. WISCHHUSEN: And I don't think I

7   used the word --

8   MR. TUVELL: And, and so my needs are

9   very simple. And it's been outstanding for over a

10   year and a half now. Give me the name of the

11   company, the location of the test machines and the

12   number of the test machines so I can better

13   appreciate this issue.

14   MR. WISCHHUSEN: I know for us we can't

15   do that, because, you know, there are not rolling

16   resistance machines and nonrolling resistance

17   machines. It's --

18   MR. TUVELL: That's fine. We'll all

19   apply it the way you want so we can understand it.

20   But part of the dilemma, you know, and part of

21   what we tried to achieve in the Smithers analysis

22   that we had done is we broke it down by company to

23   understand this issue.

24   And the dilemma I'm having throughout

25   your presentation is you lumped the industry

1   together. We don't see this as one company; we

2   see it as multiple companies, each with their

3   unique issues. Each with a number of testing

4   facilities -- a number of different locations, and

5   each with its separate needs associated with how

6   many SKUs.

7   And so what we need from you in order to

8   appreciate some of these arguments that you're

9   bringing to us, give us the breakdown by company,

10   how many test machines, where are they located.

11   With that level of understanding we can

12   start to better analyze and appreciate some of

13   your points.

14   MR. WISCHHUSEN: Okay, understand your

15   question.

16   MR. TUVELL: Next slide, please. Same

17   issue here is that this isn't helpful to me to

18   understand this problem as the industry as a

19   whole. If Michelin has a specific issue where

20   Michelin has no machines and a zillion SKUs, and

21   we decide that we want to pursue in testing, then

22   we need to sit down with you to understand your

23   issue versus Cooper's issue versus Goodyear's

24   issue.

25   If it turns out that there's a need to

1   come up with a testing schedule and data

2   submittal, if this is the direction we go, then

3   it'll be unique to each company and their

4   circumstance.

5   And so give us the breakdown by company.

6   This is not, from our perspective in order to

7   understand it and advance on this issue, we need

8   to understand it company by company.

9   So, gross numbers like this, I mean,

10   nice; take these numbers, break them down company

11   by company so I can see what we're talking about

12   here.

13   MR. WISCHHUSEN: What will you do about

14   the nonRMA member companies? Because only RMA

15   member companies, I think, are represented.

16   MR. TUVELL: Well, I know. Where can I

17   get them here, right, you know. I mean I sent

18   out, before our first workshop, over 150 letters

19   to what I understood to be tire manufacturers

20   throughout the world who supplied to the United

21   States. And I gave them our website and I gave

22   them our information.

23   Now, are they monitoring? I don't know.

24   Okay. But we're satisfying our legal requirements

25   on notification. Okay.

1   MR. WISCHHUSEN: All right.

2   MR. TUVELL: Next slide. It's extremely

3   important for us that you delineate in detail this

4   definition of what certification is, self-

5   certification is.

6   This was the first time I've heard some

7   shot at that when Dan came up and said self-

8   certification, to us, is we will give you a

9   category. We will not give you a number.

10   And if that's what it is, then we need

11   to understand it clearly, okay.

12   MR. WISCHHUSEN: Okay, you're confusing

13   self-certification with a proposal for a rating

14   system. Self-certification is very simply

15   manufacturer responsibility for the assurance.

16   MR. TUVELL: Oh, okay.

17   MR. WISCHHUSEN: That's self-

18   certification. You're talking about a proposal,

19   or our proposal for a rating system.

20   MR. TUVELL: Well, actually, I thought

21   they were both -- I understood the way you

22   described it as one and the same.

23   MR. WISCHHUSEN: No, they're two

24   separate concepts. Two separate concepts.

25   MR. TUVELL: Okay. Well, then let me

 1   say it that way, then. In the case of this rating

 2   system then you said it is we will supply you only

 3   with a letter, definitely not a number.

 4   I wish I would have seen that in

 5   something in writing with all the other details

 6   associated with that so we understand what that

 7   means.

 8   And you can see the confusion I'm

 9   having. The way the term self-certification

10   continues to be used in this whole discussion is

11   incredibly confusing to us. We have never --

12   we've seen it associated with, oh, it's the way

13   the feds do things. Oh, no, it's part of the

14   rating system. No, it's both together. See, it

15   goes hand-in-hand.

16   We need it clearly spelled out so we can

17   understand it, and so everybody can understand it.

18   This matter, and bear with me here, I

19   use the term self-certification, you use the term

20   rating system.

21   We spent quite a bit of time this

22   morning talking about the variability of machine-

23   to-machine testing as being a huge issue, okay,

24   despite the fact that the 28580 committee drilled

25   in on that to try to do their best to come up with

1   a methodology to nail it, okay.

2   Why? Because it's apparently, and I can

3   appreciate it, it's a significant issue among the

4   tire manufacturers. I mean you would like to know

5   that any data coming from any source can be

6   comparable. And I appreciate that issue.

7   Here's my dilemma. Under this self-

8   certification process that I understand, go

9   through a couple slides here to your benefits --

10   you call it benefits of self-certification. Right

11   there, stop there.

12   Let's look at bullet two down there, the

13   computer modeling. Can Michelin's computer model

14   predict the rolling resistance of Cooper's Tires?

15   MR. WISCHHUSEN: Relative to our test

16   lab numbers we would get, we could try. But the

17   problem is we're not going to have access to their

18   proprietary materials --

19   MR. TUVELL: Okay. So how would I know,

20   then, that your data's comparable?

21   MR. WISCHHUSEN: It's because Cooper

22   would do their model development against the

23   testing that they do in their labs. And their

24   modeling would match their testing.

25   My modeling would match my testing, and

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 1      we're right back to the lab -- issue, which is

 2      what I said in my presentation.

 3                MR. TUVELL:  Well, but you see where I'm

 4      going here is that --

 5                MR. WISCHHUSEN:  No, I don't.

 6                MR. TUVELL:  Well, in the ISO 28580

 7      testing they identified the lab-to-lab issue and

 8      they came up with a methodology to resolve it.

 9                MR. WISCHHUSEN:  To minimize it.  You

10      can't resolve it.

11                MR. TUVELL:  To minimize it.  Right, and

12      we're trying to find out exactly what level of

13      accuracy they were able to achieve, or their goal

14      is for achieving.

15                And you mentioned a great deal of

16      concern about that.  Yet, in your computer

17      modeling approach you say, well, will this model

18      submit to it.  There has been no testing of

19      Michelin's model against Goodyear's model, or

20      Michelin's model against Continental's model.

21                MR. WISCHHUSEN:  Because Michelin's

22      model would match Michelin's testing.  Goodyear's

23      model would match Goodyear's testing.  And there

24      has been alignment between Michelin's testing and

25      Goodyear's testing.
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1   MR. TUVELL: Okay, but none of this is

2   in the public domain, is it?

3   MR. WISCHHUSEN: No, because the ISO

4   project is --

5   MR. TUVELL: No, no, no, no, the

6   modeling capability.

7   MR. WISCHHUSEN: Oh, no, we're not going

8   to share proprietary models, no way.

9   MR. TUVELL: Okay, but that's the

10   important point here to us, and I want you to

11   understand that, okay.

12   You're representing to us that we should

13   be willing to accept the results of a model that

14   we've absolutely never seen work, that is totally

15   proprietary, never been -- not in the public

16   domain, never been subject to a professional paper

17   tested against 28580 that we could review. Never

18   been tested against other manufacturers.

19   Do you see the position you're putting

20   us in?

21   DR. HAWLEY: I think --

22   MR. WISCHHUSEN: I guess, no, I don't.

23   I mean I don't understand.

24   MR. TUVELL: We have no basis for

25   understanding whether or not your results can be

1   compared with your results, or your results, or

2   your results.

3   MR. WISCHHUSEN: Anyone else care to --

4   DR. HAWLEY: I think Mike's position is

5   that -- I'm sorry, Mark Hawley with ENVIRON.

6   I think what Mike is saying is that if

7   you use modeling to fill the gaps in your testing

8   program, so for instance, you have the same tire

9   manufactured in ten different sizes, and you test

10   the smallest, the one in the middle and the

11   largest, you don't need to test every intervening

12   tire. You can develop a computer model that

13   allows you to predict the RRC of those intervening

14   tires.

15   And then you're interpolating, you're

16   not extrapolating. And you have a direct

17   comparison in ISO 28580 of the test values at each

18   end and the middle of that range.

19   MR. TUVELL: Yes.

20   DR. HAWLEY: So that Cooper tests theirs

21   and models the ones that they don't test.

22   Michelin tests their and models the ones that they

23   don't test. And they have a good idea of how

24   accurately your computer model is estimating the

25   untested tires in each of their own range.

1   Then in order to understand how much

2   difference there may be between the modeled values

3   between Cooper and Michelin, you look at the

4   interlab alignment. Those things have been lined

5   up, the tested values have been lined up. And

6   you're only interpolating between aligned values

7   at this stage.

8   So the alignment reduces the variability

9   between the computer modeling results, as well as

10   between the test results.

11   MR. TUVELL: Well, maybe it did -- maybe

12   it did for Michelin, but it didn't for me. See,

13   if you're asking me to accept this information,

14   and, you know, we spent quite a bit of time

15   talking about 28580, and there's documents

16   associated with the quality of the data coming out

17   of 28580, and it's transparent, and it's public,

18   and anybody who wants to get it can take a look at

19   it and understand it. Then we start getting a

20   level of comfort about what can come out of that.

21   I don't have access to these proprietary

22   models. I don't have any ability to get a level

23   of comfort associated with it.

24   MS. HOLMES: Caryn Holmes; I'm with the

25   legal office at the Commission. If I understand

1   what you're suggesting it's that you would be

2   testing some -- there would be the ISO tests

3   conducted on some subset of sizes within a given

4   model.

5   And then there would be a computer

6   program that's used to extrapolate -- or

7   interpolate the results for the other tires that

8   are not tested pursuant to the ISO --

9   MR. WISCHHUSEN: No, --

10   MS. HOLMES: Go ahead.

11   MR. WISCHHUSEN: Actually the --

12   MS. HOLMES: Help me out.

13   MR. WISCHHUSEN: Their is a computer

14   model that will predict the performance value for

15   a tire design. And then the validation is to do

16   the interpolation between the tested to show that,

17   indeed, my predictive number falls on that

18   interpolated line.

19   So, it's kind of a two-step process.

20   MS. HOLMES: So is there -- if the

21   Commission, and I'm not suggesting that they will,

22   but if the Commission were to accept that kind of

23   an approach for purposes of this rulemaking, is

24   there a problem with us specifying that particular

25   approach where there is some combination of

 1   modeling and testing, as opposed to what I'm

 2   hearing you suggest at this point, which is just

 3   we'll figure out how to do it, ourselves, and Ray

 4   saying he's very uncomfortable with it.

 5   So, I'm asking whether there is some way

 6   to draft a program that specifies the way that the

 7   combination of ISO testing and modeling would be

 8   used.

 9   MR. WISCHHUSEN: I think, yes, there

10   could be. I mean I can't tell you exactly what it

11   would be right now, but, yes. I mean that's a

12   fertile ground for discussion.

13   MS. HOLMES: That was my only question.

14   MR. TUVELL: And I hope I didn't belabor

15   the point, but for some reason I think there's a

16   failure of communication on this issue where

17   you're understanding where we're coming from.

18   We're trying to -- I'm foreseeing a

19   situation maybe different than yours. And so

20   maybe I want -- it would be useful for me to

21   characterize the situation so you can understand

22   better where I'm coming from.

23   I don't necessarily see a circumstance

24   where it would be acceptable to report a letter or

25   bin. I see a circumstance where it's going to be

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1   more desirable to report a number. Okay.

2   Now, we can define fairly

3   straightforward the basis for doing that.

4   Somewhat similar, for example, we could build off

5   of what's going on in the OE marketplace.

6   We know, for example, we've talked to

7   people at Ford; they ask you to submit a sample

8   size of three tires, rolling resistance on three

9   ties, and they take the mean.

10   We could go by definition, that's it.

11   By definition the rolling resistance of that SKU

12   tire would be 28580 test of three tires and we

13   take the mean and that's it, by definition. And

14   we'll say that's representative. That's what

15   they're doing in OE right now, seems to be

16   working.

17   Or you can come out with different

18   methodologies. You would say sample size of

19   three, take the mean, add two standard deviations.

20   Fine.

21   It's a definitional issue, okay. And

22   then you could use that number and say here they

23   are, this is each one of Cooper's tires, this is

24   each one of Goodyear's. And it was based on that

25   definition which we just defined.

 1   And so it's in the context of trying to

 2   understand the potential for such a system that I

 3   start thinking about then how do we get data that

 4   could feed into that system.

 5   And my sense is that 28580 could

 6   definitely do it for me. But this whole matter of

 7   computer modeling capability of the industry to me

 8   is nothing but a black box. I mean I have to tell

 9   you, I have no idea what goes on; no level of

10   confidence in how I can compare results against

11   each other to assure this ultimate goal that I

12   have of, you know, telling the consumers that our

13   database is based on reliable numbers that can be

14   compared one against the other. Okay.

15   Regardless of what we end up putting in

16   the rating system we get out in the public, we

17   have to have this level of assurance of a reliable

18   base of information that underlies this, or it's a

19   house of cards.

20   And so that's where I was trying to go

21   with this, and where I was trying to go this

22   morning on the reliability of the 28580 test.

23   Because everybody is representing to me that the

24   28580 group did a hell of a good job. And they've

25   come up with a fairly accurate system.

1   Because that's what was perceived as the

2   need in this industry way before I got involved in

3   this stuff.

4   MR. ROBINSON: Ray, Tim Robinson, again.

5   Sorry, but I guess I don't understand the need for

6   reporting exact data on a specific tire, as long

7   as we report what's required of the tires, what

8   bin or what category it fits into.

9   And it's the tire manufacturers'

10   responsibility to assure that if we say it's a

11   three star tire, it's a three star tire. And we

12   do that now with UTQG, we do it with UTQG

13   primarily, but we assure based upon modeling and

14   test repeatability and tire-to-tire variation that

15   it fits within the category that it's designed

16   for.

17   So I guess the question is why would you

18   need all that information to assure, when all you

19   need to do really is audit periodically and say,

20   Bridgestone said this is a three star tire, we'll

21   test it, we'll see if it fits within the bin that

22   we've already prescribed as a three star tire. If

23   it fits in then it's okay.

24   Why do you need to manage all that

25   additional information? It just seems to me like

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1   excessive cost and expertise that's required by

2   the CEC.

3   MR. TUVELL: Well, Tim, I appreciate you

4   bring it up because I think this is another one of

5   the problems where communications have let us all

6   down.

7   I don't know why somebody presumes

8   there's going to be a star system.

9   MR. ROBINSON: Oh. It doesn't have to

10   be a star; whatever system it is.

11   MR. TUVELL: What if it turns out to be

12   a number system? If it turns out to be a number

13   system you need numbers.

14   MR. ROBINSON: Well, or you need a

15   minimum number, say we say a 10 equals an 80 on a

16   scorecard system. We would self-certify that this

17   tire meets an 80.

18   So then you would test it through an

19   auditing system; say, okay, it meets at least an

20   80, even if it's an 81 or whatever.

21   I don't see why you need all the

22   information, because then you have to manage it

23   all. We have to report it all, we have to measure

24   it all.

25   MR. TUVELL: Well, --

 1   MR. ROBINSON: -- just for you to

 2   require the expertise then to go through and

 3   analyze it.

 4   MR. TUVELL: Well, no, I understand and

 5   I appreciate those issues, and you're absolutely

 6   correct. There's costs and manpower associated

 7   with all of this for all of us.

 8   And it's one of the points that I tried

 9   to get across in our last workshop. The Energy

10   Commission is different, and historically has been

11   different in how we deal with products than does

12   NHTSA.

13   Our history is based on energy

14   efficiency types of requirements on products where

15   mandatory testing is the backbone of it. And

16   significantly detailed data systems exist

17   throughout. You name it. Windows, appliances,

18   cool roofs, the list goes on. Be happy to show

19   you the data that we manage and how we go about

20   doing it.

21   So I want to assure you this is not

22   something unique to the tire industry, we're going

23   to come in and find the most -- no, we do this all

24   the time, and we're very familiar with what's

25   required to do it and handle it. Okay.

1   The issue here, to us, principally is

2   where do you get this accurate information to even

3   start with. Because that's what the consumer is

4   lacking right now. They can't look at a tire and

5   identify energy efficiency. I can't look at it

6   and neither can you, probably, although you have,

7   I'm sure, a lot more history than me.

8   How do we get an accurate base of

9   information by which we build a system on?

10   MR. ROBINSON: Well, I think that's what

11   we just described what our proposal would be, is

12   to, you know, use our star rating system using a

13   self-certification type basis. Tying it to miles

14   per gallon saved, which I think is sufficient to

15   meet the requirements of the regulation.

16   MR. TUVELL: Okay, And so, but you

17   understand my point, I think, that --

18   MR. ROBINSON: Yeah, I understand your

19   point, Ray. But the option you have is auditing

20   by a third party or whatever, to assure that we

21   are in compliance. Which would save us a

22   tremendous amount of burden in the tire industry

23   to do all the additional testing, all the

24   additional reporting when we have all these models

25   in place.

1   And what it will do is it will drive our

2   models to be more precise. It'll drive our

3   repeataBility to be more narrow, such that we can

4   rate tires in a higher category.

5   MR. TUVELL: Okay, so, let me put this

6   challenge out for you. How do you help me attain

7   a level of comfort about what you're models can

8   do, and can it overcome the concern I have about

9   comparing data from Bridgestone versus Michelin

10   versus Goodyear.

11   How do you -- I mean, this is your -- I

12   don't need the answer now, go back and think about

13   it, you need to help me overcome that problem.

14   Because I don't know how to overcome that now,

15   because I've never seen your model; they're not

16   public domain; they've never been tested against

17   each other.

18   It's coming down to take my word for it,

19   Ray.

20   MS. HOLMES: Just a question.

21   MR. ROBINSON: Right. With the ability

22   for you to audit and check. These models are

23   proprietary, as Mike mentioned. Everybody has

24   their own proprietary models. They're all based

25   upon finite element analysis. They're the future

1   of tire production, tire development.

2   We try and do less testing, more

3   modeling, because testing is very expensive. So

4   that's the wave of the future.

5   MS. HOLMES: Is there information that's

6   publicly available that could be brought into this

7   proceeding that correlates the results of the

8   models with the test results using the ISO test,

9   in particular?

10   So that instead of you're saying, trust

11   us, our models, we have lots of economic

12   incentives to make our models work.

13   You could actually provide us something

14   that shows some sort of data that shows a

15   correlation between your results, the results of

16   your models and the results of the testing that we

17   would like.

18   See, I'm trying to figure out how to

19   bridge this gap.

20   MR. WISCHHUSEN: Yeah, I think there are

21   probably several papers on the use of finite

22   element analysis techniques for predictive

23   modeling and tire design. That, I think, exists.

24   Now, the link to 28580 I'm less certain

25   about just because of the shift in time. That

1   finite element work was done several years ago

2   before 28580.

3   But there would be, you know, a critical

4   part of a scientific paper is the validation by

5   testing.

6   MS. HOLMES: Right.

7   MR. WISCHHUSEN: Probably either J1269,

8   you know, the old SAE procedure, or the older ISO

9   procedure, but we showed earlier this morning that

10   all of that --

11   MS. HOLMES: Right, right. So the --

12   right.

13   MR. WISCHHUSEN: -- procedures match the

14   new procedures. So, it would be compared to a

15   testing --

16   MS. HOLMES: I'm just offering it as a

17   suggestion, --

18   MR. WISCHHUSEN: Yeah.

19   MS. HOLMES: -- as a way to bridge the

20   gap.

21   MR. WISCHHUSEN: We'll look for it.

22   MS. HOLMES: If there's data available

23   that can give us confidence, something other than

24   trust us, that those models provide reasonable

25   representations, that would be good.

1   Particularly if it's tied, as I said, to

2   a requirement that a certain amount of testing be

3   done.

4   MR. WISCHHUSEN: Yeah, finite element

5   analysis techniques are open market. I mean

6   they're out in the market. What becomes

7   proprietary about the models is how we handle

8   material properties and what the specific

9   properties of our proprietary materials are.

10   MS. HOLMES: I'm familiar with finite

11   element models with groundwater modeling, not

12   tires.

13   (Laughter.)

14   MR. WISCHHUSEN: At some level it's the

15   same.

16   MR. TUVELL: I wanted to present this

17   slide just very importantly, to try to get this

18   issue in context. I want you to see another way

19   we look at this matter of positive testing

20   relative to individual companies.

21   This is -- I pulled this 2008 North

22   America sales data out of the tire business.

23   Public document. Goodyear, 7 billion plus;

24   Michelin, 7 billion plus; Bridgestone, 7 billion

25   plus. I'm telling you numbers you don't

1   understand, I mean that you know.

2   And this is North America, by the way,

3   not global. Probably multiply each of those

4   numbers by four or five to get global sales. I'm

5   not exactly sure.

6   The test costs are the numbers that was

7   presented by Bruce Lambillotte of Smithers at our

8   February 5 workshop, again. And --

9   MR. ROBINSON: I'm sorry, Ray, those are

10   based upon the capacity --

11   MR. SPEAKER: Come up to the mic.

12   MR. ROBINSON: I think that's where we

13   have an issue again. This is Robinson from

14   Bridgestone. I think that 's where we have an

15   issue that, in our opinion, over-stated excess

16   test capacity of 25 and 50 percent.

17   That, to us, is unrealistic.

18   MR. TUVELL: No, I understand. I hear

19   you, and I requested more detailed breakdown of

20   how you got your estimates so we can better

21   understand that.

22   And so that's why I'm saying this is

23   where the source of our numbers came from. And so

24   I just did a sample division and took those test

25   costs and divided by North American sales to get

 1   percent of sales.

 2   So, if our numbers are accurate, the

 3   test costs that we would -- some sort of a

 4   mandatory testing of all SKUs would impose, for

 5   Goodyear would be a .016 percent of sales.

 6   Now, yes, it's a bad economy, and I'm

 7   not going to shortchange anybody on dollars. And

 8   I'm not going to suggest that that's, you know,

 9   lost in the noise. I'm not saying any of that.

10   I'm trying to present this stuff in context.

11   Okay.

12   My concern is Cooper's. Frankly, I mean

13   those numbers are big because of the SKUs.

14   Because of all the -- and I'm pretty much sure you

15   don't have a lot of testing capacity because

16   you're not in the OE business.

17   And so I look at this as a company-by-

18   company issue, and would like to understand it

19   that way, and like to see the data presented that

20   way. Because then we can deal with it that way.

21   But lumping it all together, the

22   industry as a whole as one and the same and all in

23   the same basket, no, it's not. It's not. Okay.

24   And so it's not helpful for us to see

25   this stuff all lumped together. It confuses and

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 1    compounds the issues in ways that are just not

 2    very helpful to advancing these subjects, to us.

 3              MR. MEIER:  I've got a couple questions

 4    related to this, that's why I suddenly got really

 5    eager to ask a question.

 6              Do you know how much it costs per tire,

 7    or something like that, to put on this label?  Did

 8    you divide this by the number of tires, the 20

 9    million or the 1 million.  So it's cents per tire

10    cost?

11              MR. WISCHHUSEN:  I don't follow what

12    you're asking.

13              MR. MEIER:  Well, if you took the total

14    cost of this information program and divide it by

15    the number of tires, presumably it's going to be a

16    certain number of --

17              MR. WISCHHUSEN:  Well, you know, if you

18    look at the cost numbers we presented, you know,

19    on one of these slides --

20              MR. MEIER:  Yeah.

21              MR. WISCHHUSEN:  -- and you know the

22    approximate number --

23              MR. MEIER:  Number of tires.

24              MR. WISCHHUSEN:  -- of tires sold, --

25              MR. MEIER:  So it's a very small
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 1   fraction of a penny per tire. And do you have any

 2   idea how it is in other products that have energy

 3   labels?

 4   Because, you know, almost -- these

 5   singular labels exist in refrigerators, air

 6   conditioners, and radios and televisions, I guess,

 7   if they're EnergyStar and everything.

 8   So it's not that unusual a burden to get

 9   an energy label on a product. And somehow they

10   figured out how to do the costs.

11   But it would be interesting to compare

12   the costs, the testing costs in these different

13   products, because I don't know. It might actually

14   be very different.

15   But I wanted to ask a couple other

16   questions about testing. So when you send a --

17   when an automobile manufacturer requests

18   information about your tires, how do you report to

19   them? What do you report to them in terms of

20   data? Is there a form or something that you might

21   even be able to show us?

22   MR. WISCHHUSEN: One of the guys that

23   worked more with the OEs want to field that one?

24   I don't do a lot of OE work.

25   MR. GUINEY: There's two types that I'm

1   familiar with. One is they present us a target

2   specification that is an RRC number. And then

3   they ask for test reports.

4   So if we generate a test report off of

5   our test machine, they can ask for that complete

6   test report. And they do.

7   If I go out to an independent laboratory

8   and attain that, we send them that complete test

9   report.

10   So they utilize all of the data from a

11   typical test report for their purposes, however

12   they -- whatever the -- and that's a key point.

13   It ends up being whatever the customer demands.

14   And the customer understands the cost of what they

15   demand sometimes.

16   MR. MEIER: Right. Because I saw some

17   numbers that range from the manufacturers

18   requiring three tires, PSA, and France requires

19   ten tires to be tested. It makes one wonder,

20   well, why do they have those differences. And I

21   think you explained that.

22   MR. GUINEY: Yeah. It all goes back to

23   what they do internally in their own engineering

24   protocol to do something with that.

25   And we meet their requirement, is the

 1   best answer.

 2   MR. MEIER: Okay. Can I go back to that

 3   graph, because now I want to talk about

 4   alternative rating systems.

 5   I thought this was a very useful plot

 6   because it showed the 95 percent confidence level

 7   of each of these tires. And that is to say that

 8   the top of each of those bars equals the -- you're

 9   95 percent confident that the value is that or

10   below what's reported there.

11   MR. ROBINSON: Well, the mean is within

12   that range.

13   MR. MEIER: Yeah, yeah, that SKU,

14   because you're testing them, that product run is

15   going to be less than the top of that.

16   So that here you could say, as an

17   alternative rating system, you could say look, you

18   simply test these models and report that top

19   value, the value that's right at the top of the

20   bar. And we're saying we're 95 percent confident

21   that the rolling resistance is equal to or less

22   than that value.

23   Is that -- that's an alternative way of

24   reporting the data, isn't it?

25   DR. HAWLEY: Let me suggest what Mike --

1   THE REPORTER: Can you come to the

2   microphone, sir?

3   DR. HAWLEY: Just one particular problem

4   that might arise if you do that is exemplified by

5   looking at the bars at about number 45 or so, that

6   have relatively wide error bars there.

7   If you look at the top of those, say at

8   11, and you go over to the right, there's a large

9   number of bars that have lower -- excuse me,

10   higher average rolling resistances than that, and

11   lower tops of the bars.

12   It would appear that the tires with the

13   very large bars have higher rolling resistance

14   than some of the tires where the averages are

15   actually lower than the averages for those.

16   I'm not sure I've expressed that --

17   MR. MEIER: Yeah, I understand exactly

18   what you're saying, --

19   DR. HAWLEY: Okay.

20   MR. MEIER: -- and there are two things

21   going on. One is you see those tires at 49 that

22   have very high large bars, if you wish, confidence

23   bars. Those, we know there's a lot of product

24   variation in them. And there's a strong -- that

25   makes the manufacturer have a strong incentive to

1   prove quality control and make that narrower so

2   that they can confidently report a lower value,

3   isn't that correct?

4   DR. HAWLEY: I think that's probably

5   true. I just --

6   MR. MEIER: Yeah.

7   DR. HAWLEY: -- point those out because

8   those --

9   MR. MEIER: Yeah.

10   DR. HAWLEY: -- those are the most

11   obvious examples.

12   MR. MEIER: And there's still another

13   problem here, because this doesn't exclude the

14   alignment error. And so we have to figure out

15   well, how much more would the manufacturer have to

16   add to include the alignment error.

17   I thought it was only going to be a few

18   percent; and now I'm not sure, after this morning,

19   but it sure makes me concerned if we have to add

20   another 20 percent or something like that, to

21   account for alignment error. That just doesn't

22   ring right with what I've seen before.

23   But it just seems to me that right here

24   is basically a reporting done with 95 percent

25   confidence that the value you're reporting to the

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     1   California Energy Commission is equal to or below

     2   that.

     3   DR. HAWLEY: Agreed, but if you put

     4   those values out in front of the consumer,

     5   sometimes he's going to be selecting a tire that

     6   he thinks has a lower average rolling resistance,

     7   and getting a tire that actually has a higher

     8   average rolling resistance.

     9   MR. MEIER: You mean, so people want

    10   tires with higher rolling resistance?

    11   DR. HAWLEY: No, --

    12   MR. MEIER: Well, yeah, but I guess what

    13   happens is, I mean there's an incentive for the

    14   manufacturers to reduce that certainly so they get

    15   much closer to the actual value. But, --

    16   DR. HAWLEY: And, if the variability and

    17   width of the error bars was consistent across all

    18   the products, then what you're suggesting would

    19   work just fine. But it to be essentially the same

    20   in terms of the order of the tested tires, it

    21   would be the same whether you ranked them on the

    22   basis of the average or on the basis of the 95

    23   percent --

    24   MR. MEIER: I just think it's been --

    25   that creates greater incentive for the

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 1        manufacturer to reduce the product --

 2                   DR. HAWLEY:  I understand.

 3                   MR. MEIER:  -- product variation.  But I

 4        just wanted to present that as here's an

 5        alternative way to report the data.  It's been

 6        done.

 7                   We've got one more little addition, we

 8        have to worry about the alignment, which I don't

 9        know what that increment for the alignment would

10        be.  But it's there.  It's completely set.

11                   And we also know how to verify it.

12        Somebody, a test lab can come in, test the tires,

13        and they can find for a sample of ten tires what

14        the variation is, and what the 95 percent

15        confidence level is.

16                   And so there's a symmetry, and they can

17        easily verify that there is accurate reporting.

18                   MR. TUVELL:  Not for you, Mark.

19                   (Laughter.)

20                   MR. TUVELL:  Ray Tuvell, again.  I think

21        that one of the things that you're hearing from

22        us, and it's a core perspective that I would like

23        to make sure you understand.

24                   As things have evolved now, we're seeing

25        a lot more of what we're trying to accomplish here
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1   in the direction of value for the program that

2   we're putting together, as similar to what's

3   happening on the OE side of your business.

4   Where it seems to be, in seeing a great

5   deal of consistency with what we're seeing as.

6   gosh, this stuff is important. They mandate the

7   testing. They've come up with a sample size.

8   They've figured out a method that reduces to one

9   number.

10   And you guys have been living with that

11   for quite some time, you're used to it. You know

12   what it is. It works.

13   And so we see that, too. And we see a

14   great deal more of value what that yields as

15   opposed to the comparisons that we heard

16   consistently from the industry about oh, no, the

17   better way to compare what you need to do here is

18   the UTQG system that NHTSA runs.

19   It's important for you to understand

20   that we don't see that, and never saw that as the

21   model we wanted to build a program after. And my

22   friends from NHTSA here understand when I say

23   this, it's no criticism of them. Because they've

24   been very candid and forthcoming with me about

25   concerns about the program, themselves.

1   And we never saw that as a good model to

2   build off of, for many many reasons. And you

3   touched on a few of those in your presentation.

4   And, by the way, just to clarify a few things

5   about that. And I'd suggest, if you get a chance,

6   you might want to take a look at this

7   independently.

8   On the UTQG there is extremely limited

9   amount of independent verification done by NHTSA.

10   Due to just what you would expect, limitations in

11   funding for government agencies to run that side

12   of their programs.

13   So, to suggest that that is a good model

14   because look how well it has worked in the past,

15   and look at all this great independent testing

16   that's going on, and they've done this

17   verification and they haven't found these

18   problems, I've looked at that in detail and I

19   understand it in detail. I would encourage you to

20   look at it in detail. I would think you'll find,

21   if you didn't already know, there's not much

22   there.

23   And so we know that, and we understand

24   that as another limitation of those types of

25   programs. In fact, does shift a heck of a lot of

1   burden to the government. And if the government

2   is not in a position to pick up that burden, it

3   doesn't work.

4   By the way, I was extremely encouraged

5   about the comment, what I thought I heard you say,

6   Mike, about you see the value in changing the UTQG

7   system so that derating is not allowed. And I

8   would love to see the industry take that statement

9   publicly, and that you would endorse and support

10   NHTSA changing that, the UTQG program, so that

11   derating is not allowed.

12   I think that's a huge step in the right

13   direction. And it would be a great thing for the

14   industry to step forward and we're behind it,

15   we'll support NHTSA do it. It's a problem for us,

16   do it, NHTSA, we'll support you.

17   So I'd love to see you folks follow

18   through on that. You obviously see the

19   shortcomings. Follow through. Support them in

20   making that change.

21   MR. ROBINSON: I'll make one point.

22   Again, Tim Robinson from Bridgestone.

23   Ray, we understand all your concerns,

24   but let's not lose sight of the prize here. I

25   mean the whole objective is to reduce rolling

267

1   resistance and improve fuel efficiency for the

2   state of California, and obviously for the whole

3   world.

4   We think we can do this, the RMA's

5   position is we think we can do this for the lowest

6   cost through self-certification. And have as much

7   accuracy as we would by testing and reporting on

8   almost every single tire. Much less cost.

9   So, the RMA position, we feel that we

10   can do this. We can achieve all of our goals. In

11   addition to that, improved tires by reducing fuel

12   efficiency and create competition within the

13   marketplace to eventually force more tires from

14   the three or four star categories into the five.

15   And then maybe later on shift the scale,

16   whatever, to make the 5s a little lower or

17   whatever, or add a sixth star or seventh star, or

18   whatever.

19   So we think we can do that through self-

20   certification. Thanks.

21   MR. PETERSEN: This is Gene Petersen

22   with --

23   MR. SPEAKER: Microphone.

24   MR. PETERSEN: This is Gene Petersen

25   with Consumer Reports. I just had a couple

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1   middle-of-the-road questions for anyone to answer.

2   First, the alignment costs. I know it's

3   a proposal, but did you make any attempt to

4   analyze what that would cost?

5   MR. WISCHHUSEN: I didn't participate in

6   the committee; I'm looking for Dan, who did. But

7   I think there was some discussion about the cost

8   of the alignment procedure.

9   MR. GUINEY: Acquisition, obviously

10   acquisition costs of the alignment tires; delivery

11   cost of the alignment tires was considered. As

12   well as just the testing of the alignment tires.

13   So you could use those three categories,

14   tire cost, delivery and testing cost of the

15   alignment tires. Analysis. Like somebody said,

16   computers.

17   MR. PETERSEN: I just had a comment that

18   a number of SKUs report. I was wondering if that

19   was under-estimating what might be available.

20   Because I was thinking back that, you know, each

21   time an existing model, components may change,

22   change the suppliers, or change of plan, different

23   techniques in building it would require going back

24   and retesting them.

25   MR. WISCHHUSEN: Maybe I misunderstood

1   your question. I thought you were asking if that

2   number of SKUs we used, which was 24,000, if that

3   really under-estimated what was actually out

4   there.

5   MR. PETERSEN: That's correct, that's my

6   point.

7   MR. WISCHHUSEN: That may very well be

8   the case. I think when the industry went through

9   its version of how many SKUs do we have, it was

10   how many active SKUs did we have.

11   MR. PETERSEN: Okay.

12   MR. WISCHHUSEN: Now, it's an

13   administrative procedure to me to say this SKU is

14   now inactive. But there may still be thousands of

15   them out in the marketplace, in dealers'

16   inventories, waiting to be sold.

17   So the population of SKUs may be a

18   little bit more than the number that we consider

19   active SKUs. So there probably are more tires out

20   there than what that number shows.

21   MR. PETERSEN: Okay. And then listening

22   to the challenge that Ray was talking about, in

23   getting a real number. And going through this

24   modeling thing and so forth.

25   Ray, I was just wondering, do you really

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1        know, do you really need to know where the number

2        came from?  For instance, if they just gave you a

3        number and if they're tied down to the penalty of

4        a self-certification process, wouldn't that be

5        sufficient?

6                MR. TUVELL:  Yeah, understand the number

7        issue in this context for us, okay.  I'm looking

8        at the underlying credibility of the program, as a

9        whole, okay.

10               What's the basis for it?  What is this

11       program built on?  So that ultimately if any

12       consumer, or you know, you at Consumer Reports,

13       want to go back through the details and say, I

14       want to see, what is underlying this.  I want to

15       know if I can develop independent confidence in

16       this program as a whole.  Let's say it ended up

17       being a five star program.  That you could dig

18       down and find it.

19               So far, right now, the only basis we

20       have determined to develop a level of confidence

21       in determining, assessing the energy efficiency of

22       a tire is the testing.  Either J1269 or 28580.  We

23       know of no other basis for doing that.  It yields

24       a number.

25               It's a number that has been used
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1   commonly in this -- it's used by OEs day-in and

2   day-out. And apparently it works. And it works

3   to the hundredth, because those numbers are

4   commonly out there to the hundredth.

5   And so we looked at it and said,

6   fantastic. Fantastic. In fact, they're making it

7   better with 28580 by coming up with a machine-to-

8   machine alignment process. So now we can compare

9   numbers from machine to machine.

10   So we look at that and we go, these

11   numbers provide the underlying basis for the

12   program, as a whole. Anybody can check it and

13   say, okay, I got some confidence here. I've got

14   some confidence here.

15   And I have yet to see come forward some

16   other basis or a proposal for a basis that could

17   yield anywhere close to that level of confidence.

18   Without that confidence these government programs

19   are meaningless. They're meaningless.

20   And unfortunately, I think, it's also

21   part of the reason why it's one of the

22   shortcomings of UTQG. And there's many reasons.

23   I mean once I understood in depth how the UTQG

24   numbers were determined, and it's part of a self-

25   certification, the minimum part is the testing.

 1   It's just kind of like I don't have any confidence

 2   in it, either.

 3   MR. PETERSEN: Here's the question. Do

 4   you see the state of California being very active

 5   in doing auditing?

 6   MR. TUVELL: Absolutely. Absolutely. I

 7   can -- budget is simply not a problem for me on

 8   that issue. This is a very important program to

 9   the state of California. I don't have problems

10   getting money for this program. I can put

11   together a very aggressive auditing program and

12   fund it.

13   And one other point on the testing costs

14   and stuff like that that I wanted people to keep

15   in mind. Hey, look, if it's going to cost you a

16   lot to run the test, I have people who will run

17   the test for me pretty darn cheap. I'd suggest

18   you use them.

19   The analysis we did and presented at our

20   February 5 workshop was simply testing capacity of

21   the industry. We did not include independent

22   testing capacity. I mean I have a sense what they

23   are out there. I know exactly what they cost

24   because that's what they charged me.

25   If it ends up being as expensive for you

1   guys as you represented up here, I would want to

2   make a suggestion. Stay out of the business. Go

3   to the independents. You're going to save a heck

4   of a lot of money getting your testing done. They

5   do a very good job, by the way. And they're

6   quick, and I can depend on their price structure.

7   You'll save a lot of money.

8   MR. WISCHHUSEN: All right, I finished

9   my presentation a long time ago.

10   (Laughter.)

11   MR. WISCHHUSEN: If there are no more

12   questions -- Julie?

13   MS. ABRAHAM: One quick question on --

14   THE REPORTER: Could you come to the

15   microphone, please.

16   MS. ABRAHAM: Sorry. This is Julie

17   Abraham from NHTSA. Mike, just a very quick

18   question. The number that you reported, the cost

19   numbers that you reported, you said that's a

20   testing cost. Is that testing and recording, or

21   just simply testing every single --

22   MR. WISCHHUSEN: It was testing. We

23   didn't add a separate number for reporting, but --

24   MS. ABRAHAM: Is there a cost associated

25   with reporting the data to the government? And,

1   if so, what is that cost?

2   MR. WISCHHUSEN: There will be some IT

3   type overhead costs. You know, you're going -- if

4   you don't have server capacity to do the

5   information transfer.

6   I'm thinking back to early warning.

7   Now, this is nowhere near the magnitude of early

8   warning, but you have that sort of infrastructure

9   requirements which I suspect everybody is probably

10   pretty well set for. You may have some software

11   development costs upfront, and then maybe a small

12   ongoing maintenance cost for it.

13   My gut feels it's small compared to like

14   the hardware costs and the personnel costs of

15   staffing the test machine.

16   MS. ABRAHAM: But you pretty much you

17   guys would keep a record somewhere in your company

18   of what every tire would -- and some spreadsheet

19   form of --

20   MR. WISCHHUSEN: Yeah, I would --

21   MS. ABRAHAM: Regardless of whether it's

22   tested or modeled or what-have-you, you would have

23   a --

24   MR. WISCHHUSEN: I would suggest --

25   MS. ABRAHAM: -- record of that --

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1   MR. WISCHHUSEN: I would suspect or I

2   would anticipate that data retention would be part

3   of the regulation. I mean we'd be told how long

4   we had to keep the information.

5   You know, we, internally, have our own

6   data retention policies, but they are overridden

7   by regulatory requirements.

8   MS. ABRAHAM: Okay. But I guess what

9   I'm asking is not just simply whatever rating it

10   is, but you would keep the actual numbers, whether

11   it's RRC or RRF or, you know, whatever it is. You

12   would have that somewhere in your record?

13   MR. WISCHHUSEN: Now that may differ if

14   you did it by -- if you actually ran the test. If

15   you actually ran the test, yes, you got the test

16   results.

17   If you do modeling to interpolate the

18   number, you've probably got some sort of a report

19   coming out of that finite element analysis, but --

20   MS. ABRAHAM: Um-hum, but some --

21   MR. WISCHHUSEN: -- I suspect, I suspect

22   somewhere there --

23   MS. ABRAHAM: -- number --

24   MR. WISCHHUSEN: -- would be something

25   that would say this is why we gave it this value.

1   MS. ABRAHAM: Okay. Thanks.

2   MR. GUINEY: Dan Guiney, Yokohama. Ray,

3   if I understood the basis for the foundation for

4   wanting to dig deeper and understand the

5   underlying foundation of everything that's done, I

6   guess the question I would have, do you have a

7   sense of how many consumers in the state of

8   California that are buying tires for a vehicle

9   would ever do that?

10   MR. TUVELL: Go down to that level of

11   detail? Yeah, I talked to John Rastegger

12   (phonetic) at TireRack a lot about this stuff. I

13   don't know if you folks deal with the TireRack. I

14   mean one of those reputable groups out there.

15   And he readily admits that his consumers

16   are a different breed of folks. He and I think

17   it's a relatively small percentage, definitely

18   less than 10 percent, probably less than 5 percent

19   that would actually dig deep to look at the data.

20   Okay. That's ny sense, too.

21   MR. GUINEY: And then the underlying

22   foundation of the data. You mentioned we got to

23   go all the way to the underlying foundation --

24   MR. TUVELL: Yeah, yeah, here's what I

25   meant by that. The initial question in my mind

           1   that the vast majority of consumers, and I think

           2   Gene said that, and we've heard this over and over

           3   again from retailers, the vast majority of

           4   consumers do little or no research on tires.

           5   You weren't at the November

           6   presentation, the roundtable. We talked a lot

           7   about the stress purchases. They come in, I need

           8   a tire, I need it now, get me out of here quick.

           9   What do you got in stock. Boom, that's it.

          10   That's it.

          11   And so without a doubt we need to come

          12   up with a rating system that works in that

          13   environment better than any other. Okay. Better

          14   than any other if we're going to be successful,

          15   because that's how the vast majority of products

          16   are sold, we think, here.

          17   But understand, see, that's different

          18   than what underlies the program. I got to be

          19   able, ultimately when I give that information to,

          20   you know, that soccer mom who needs her tires, she

          21   needs to understand there's a level of confidence

          22   behind it.

          23   No different than, here's an example

          24   I've used time and time again. Any time you go

          25   out to buy a food product you will see a nutrition

1   label on there, okay. Now, you may or may not

2   read it. I have to at my age or otherwise I'

3   going to get like this.m

4   I have a level of confidence in that

5   information because there's a government program

6   behind it that specifies exactly how the testing

7   was done, exactly how you can report that

8   information. It has a confidence behind it.

9   And that's what we need to establish for

10   this program. A level of confidence behind it for

11   anybody who wants to trace it back to its source.

12   MR. GUINEY: Correct me if I'm wrong, so

13   the confidence building is for the government

14   agency, not for the end user.

15   MR. TUVELL: It's for everybody. I

16   mean, we're not -- there's no way I'm going to be

17   able to go to our Commissioners here and say,

18   willing to develop a program, by the way, and it's

19   based on data where we're just kind of accepting

20   information because people say, here, take our

21   word for it. They'll throw me out in a second.

22   MR. WISCHHUSEN: Yeah, I understand.

23   MR. TUVELL: Okay. It's for the

24   sanctity of the program as a whole. It's for

25   everybody involved. It's for us that are running

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 1    it.  It's for the public that's trying to use it.
 2    It's for the retailers that are using it to sell.
 3              It's for you guys to advertise your
 4    product.  Think of it, I mean this is one way I
 5    always kind of looked at this, man, I can make
 6    your life so simple.  I'm going to get all this
 7    great data on every Michelin tire made, Dan.  Now
 8    you know exactly what your competition is like.
 9    You don't have to do any testing, yourself.  You
10    just market your tires.
11              Now you can go out to the public and
12    say, we've looked at the data.  Here, you can look
13    at it.  Our tires are better than Michelin.  Wham,
14    bam.
15              MR. SPEAKER:  Save you money, too.
16              MR. TUVELL:  And I know I'm going to
17    save Gene money because he's not going to have to
18    do any rolling resistance testing anymore.  He's
19    going to love me.  Okay.
20              So, I look at this also as something
21    that, we're a whole advantage to the industry.
22    You got reliable data you can use in your
23    advertising, and make claims about your products.
24    I mean I'm just going to win/win.
25              Is there a cost associated with it?
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 1   Yes. Are there logistics associated with it?

 2   Yes. Okay.

 3   We're not as bothered by that side of

 4   it, because we're used to doing that. We do it

 5   with all energy efficiency products. But we

 6   appreciate and understand the impact on this

 7   industry, and that's why we're trying to nail this

 8   down in some specifics. That's why I paid

 9   Smithers to do the analysis, to come up with some

10   reputable numbers that I can use to get a grasp of

11   it.

12   MR. GUINEY: So the confidence we have

13   with our proposal has to be transmitted to you --

14   MR. TUVELL: Well, I --

15   MR. GUINEY: -- as the agency?

16   MR. TUVELL: Well, what I've tried to

17   explain, Dan, is where I have concerns about the

18   proposals that I'm hearing from the industry.

19   But, also, understand, I've never, and still today

20   I couldn't tell you exactly what the detail

21   proposal of the industry is.

22   I'll give you a perfect example. Maybe

23   this is a -- and if you don't want to answer this,

24   don't.

25   Is the industry committed to ISO 28580

1   as the test protocol for this program?

2   See, I've never heard the industry step

3   forward and say, ISO 28580, we're happy, get it

4   off the board, let's go. Next issue.

5   MR. GUINEY: I think in the one workshop

6   I was in that we discussed that, we said that we

7   believe we understand the transition between the

8   two, and we don't see a problem. I believe that's

9   what we said.

10   MR. TUVELL: Okay, no, I heard it that

11   way. But, see, that's not as clear as saying the

12   industry accepts ISO 28580 as the official test

13   protocol for the Energy Commission program and the

14   NHTSA program. Done issue, guys, let's focus on

15   the real issues. See, it's --

16   MR. GUINEY: That's another note we'll

17   take --

18   MR. TUVELL: Yeah, see, I mean I would

19   love to get a clear understanding of where the

20   industry is coming from on each one of these

21   issues today. Because I couldn't tell you right

22   out, what is the industry proposal. I couldn't

23   tell you.

24   I mean I'm getting little pieces every

25   now and then, but I still don't know what it is.

1   I still don't know what it is.

2   So, yes, as you put it, am I lacking in

3   confidence, yeah, I don't understand. How can I

4   be confident? I don't get it yet.

5   MS. NORBERG: Maybe just because I think

6   it's 5:18, and maybe if we can kind of wrap up in

7   a way that I think we understand and hear your

8   needs. And maybe we can take all of this good

9   discussion and discuss among our members how we

10   can try to provide you with the clear explanation,

11   I guess, of the proposal.

12   I thought we kind of got through that

13   today, but we can take another stab at it during

14   the comment period and submit our comments for the

15   record to try and clarify so that everyone

16   understands where we are -- where we stand, as an

17   industry, on test methods on the RMA proposal.

18   And we can discuss internally the

19   conversation that we've had just now, and how we

20   can be responsive to I think what we're hearing.

21   If it's helpful, we can do that and get back with

22   you during the comment period.

23   MR. TUVELL: I really appreciate that.

24   And, throughout the presentations today I've made

25   numerous requests for -- more specific requests,

1   you know, for data and breakdowns and that sort of

2   stuff, you know, that frankly is complicating

3   things for us.

4   It's dragging on. We're not getting the

5   level of specificity we need. We're pretty much

6   getting to the point where we're concluding it is

7   not going to be forthcoming, you know, you

8   expecting it any more, time to move on.

9   MS. NORBERG: Yeah, I'm sorry, you may

10   have missed what I said after the break, but now

11   that we've heard all the input on the data

12   analysis and Mark Hawley's presentation, that we

13   will be adding that data report and providing a

14   data report on the underlying data at the end of

15   the comment period from this workshop.

16   I'm sorry, you may have been out of the

17   room when I stated that here. But that's

18   definitely our plan, and I'm sorry if others

19   didn't hear about it, but that's definitely our

20   plan.

21   MR. TUVELL: Yeah.

22   MS. NORBERG: And I did state that

23   before --

24   MR. TUVELL: And I really appreciated

25   that. And just as on, you know, that outstanding

1   list of information requests that our

2   Commissioners submitted, you know, that's still

3   all very important to us.

4   MS. NORBERG: Well, I think it's, for

5   use, just kind of closing by that list. For those

6   who haven't seen the list, the items on the list

7   are the data, which I think we've covered in

8   detail today. And, as I said about a minute ago,

9   we will be providing the full list of data and the

10   report during the comment period, taking into

11   account all of the discussion and additional

12   considerations that we heard today.

13   So that -- the second item -- I mean the

14   first item. The second item was a whitepaper on

15   self-certification that we provided you back in

16   June 2008. And we've spent, I think, a lot of

17   time this afternoon going through self-

18   certification in more detail. If there's more

19   that we need to provide on self-certification

20   we'll talk about that internally in our group and

21   see what more we can provide.

22   The fourth request was about testing

23   capacity. Mike just gave a lot of information

24   about testing capacity here today. We've heard

25   your concerns and we'll go back and see what more

1   we can do to give you more detail.

2   I think the challenge with the request

3   to provide the testing capacity data as requested,

4   but as Mike explained, the issue is not as simple

5   as that.

6   And so what we've tried to do in the

7   presentation that Mike went through was to give

8   our best assessment of how we would do that in a

9   way that make sense, given the industry's testing

10   situation -- so then we can take all the

11   discussion that we've heard today and see what

12   more we can provide.

13   MR. TUVELL: But, on the testing

14   capacity, see our request that has been

15   outstanding, It's very simple. Name of company,

16   number of test machines, location.

17   MS. NORBERG: Yeah, I understand that.

18   The request was simple, but the answer isn't that

19   simple. And so, I mean -- honestly trying to

20   fulfill that request is impossible how it's

21   written. So we're trying to be responsive in a

22   way that is possible. And we will talk internally

23   to see what more we could give you on --

24   MR. TUVELL: Okay.

25   MS. NORBERG: -- and, you know, provide

 1   comments --

 2   MR. TUVELL: Right, and then so I would

 3   encourage you to look at that entire list of

 4   requests, because it is more detailed and it is

 5   very specific. And, as you're restating them now,

 6   no, they haven't been forthcoming. And it's still

 7   out there. And there are people who want it and

 8   are wondering why it's not forthcoming.

 9   MS. NORBERG: As I've gone through, I

10   think we've addressed all four. And what I

11   provided, and we can submit additional material

12   during the comment period, and --

13   MR. TUVELL: Okay, but look, --

14   MS. NORBERG: -- and we can see where we

15   are.

16   MR. TUVELL: Okay, but --

17   MR. SPEAKER: California sales --

18   MS. NORBERG: I'm sorry? California

19   sales, right. And that's just not information

20   that exists, so --

21   MR. TUVELL: It's not California sales.

22   I can put up the list if you want. But, Tracey, I

23   just -- I don't want to -- I hate belaboring this

24   point, but no, we do not believe you're in any way

25   compliant with that request. So, please, don't

1   imply that, yes, you have supplied all that

2   information and everything is fine.

3   It is not, okay. And until we get it

4   and tell you, yes, thank you, you've satisfied our

5   needs, you haven't.

6   MS. NORBERG: Okay, maybe I can restate

7   what I just said. We will provide the data by the

8   end of the comment period along with the analysis

9   of that data where Mark provided the summary

10   today.

11   Number two, we've gone through the SKUs

12   and we've addressed those. We think the Smithers'

13   estimates are accurate.

14   Number three, the whitepaper -- I'm

15   sorry if you don't have a copy of what we provided

16   you --

17   MR. TUVELL: I have.

18   MS. NORBERG: -- in June. We --

19   MR. TUVELL: I have the whitepaper.

20   MS. NORBERG: -- completely submitted

21   that again.

22   And number four, the testing

23   availability. We've tried to be responsive in the

24   way that it's possible, given the industry's

25   configuration. We will go back and discuss that

1   further to see what additional information we may

2   be able to provide, and provide that during the

3   comment period.

4   And so, just to be clear, I'm not saying

5   that now we have completed the request. I'm

6   saying that I've answered each point today, and

7   that we will look forward during the comment

8   period to be further responsive.

9   Is that clear?

10   MR. TUVELL: Yes, that's helpful.

11   MS. NORBERG: Okay, great. Thank you.

12   And thank you, everyone else, for all the time

13   today. It was kind of a marathon session, but

14   thank you all very much.

15   (Whereupon, at 5:25 p.m., the staff

16   workshop was adjourned.)

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                    CERTIFICATE OF REPORTER

        I, PETER PETTY, an Electronic Reporter,

do hereby certify that I am a disinterested person

herein; that I recorded the foregoing California

Energy Commission Staff Workshop; that it was

thereafter transcribed into typewriting.

        I further certify that I am not of

counsel or attorney for any of the parties to said

workshop, nor in any way interested in outcome of

said workshop.

        IN WITNESS WHEREOF, I have hereunto set

my hand this 1st day of May, 2009.

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